

Learning in the Great Outdoors

A Stewardship Approach to Curriculum K-6



*Thank you to our 4-member boards,
ALCDSB, CDSBEO, OCSB and RCCDSB,
for their contribution of student photos.*

Acknowledgements

Project Coordinator

Charlotte Rouleau Executive Director,
Eastern Ontario Catholic Curriculum Corporation

Project Lead

Carrie Seguin Curriculum Consultant
Catholic District School Board of Eastern Ontario

Writers

Andrea Cunningham Teacher, St. John Catholic Elementary School
Catholic District School Board of Eastern Ontario

Mary-Kate Bridson Curriculum Consultant
Catholic District School Board of Eastern Ontario

Teddy Charles Teacher, St. Cecilia Catholic Elementary School
Ottawa Catholic School Board

Mark Kyte Teacher, École Catholique Cathédrale
Algonquin Lakeshore Catholic District School Board

Reviewers

Kristen Charles K-6 Arts Consultant
Ottawa Catholic School Board

Lori Bryden Vice-Principal, St. Francis of Assisi School and
École Catholique Cathédrale
Algonquin Lakeshore Catholic District School Board





Table of Contents

Stewardship: Catholic Teaching in Action	1
EOCCC Outdoor Education Prayer	4
A Prayer for our Earth	5
Outdoor Learning: Learning in Nature, Learning with Nature, Learning to Respect Nature	6
Honouring Indigenous Principles of Learning (Creating a Holistic Learning Experience for All)	11
Outdoor Learning Opportunities in Urban Settings and “Nearby Nature”	17
Lesson Overview	21

Primary Lessons

Winter

Evergreens in a Winter Forest	24
Here There and Under Where	32

Spring

Why Plant Flowers Bee Cause	40
Making a Difference – Taking Care of our Water	48

Summer

Insects and Bugs - Sharing the Earth and Sharing God's love	57
Summer Sun - A time to have Summertime fun	67

Fall

A time to Harvest – Local Resources	77
Welcoming Seasonal Changes in Fall	87

Junior Lessons

Winter

The Beauty of Darkness and Light	96
Snow, Ice and Adapting to Cold – Building Structures	102

Spring

Pollination and Stewardship of God’s Creations	110
Making Change - Protecting Our Shorelines	117

Summer

Creepy Crawlies	124
The Sacredness of Our Water	136

Fall

Harvest and Gratitude	145
The Art of Observation: Colours, Change, & Transitions	155

Stewardship: Catholic Teaching in Action

“As stewards of God’s creation, we are called to make the Earth a beautiful garden for the human family.” –Pope Francis

In our Catholic schools, we work each day to respect God’s creation: animals, plants, the environment, humanity, and so on. We have environmental action clubs, recycling programs, greenhouses and community gardens, and we celebrate Earth Month and Earth Day every April. The team that gathered to work on this resource recognizes the great work that is already happening in our Catholic schools. We have worked to develop lessons and activities that will help you further develop ecological learning that reflects our Catholic Social Teaching to “Care for Creation”. This resource is meant as a starting point or a stepping-stone for teachers of Kindergarten and grade 1 to grade 6 to take learning outside and incorporate outdoor learning into day-to-day teaching and learning practices.

Pope Francis, an avid environmentalist writes “I urgently appeal, then, for a new dialogue about how we are shaping the future of our planet. We need a conversation which includes everyone, since the environmental challenge we are undergoing, and its human roots, concern and affect us all” (Laudato Si). It is our belief, as a team of teachers, that our Catholic schools must initiate this conversation with our students so that our Catholic graduates leave our schools with a sound understanding of learning in nature, learning with nature, and respect for nature. By taking learning outside, teachers can help students become Christians who care for and respect the environment.



The Lessons

In this resource, you will find lesson plans for teachers of Kindergarten to Grade 6, though teachers in other divisions may find the lessons useful and can easily adapt them to suit the needs of the learners in their courses.

This resource is organized into lessons for the Primary (K-Grade 3) and Junior (Grades 4-6) divisions. Lessons are further broken-down to reflect the seasons of the year: Winter, Spring, Summer and Autumn.

	Primary	Junior
Winter	Evergreens in a Winter Forest Here, There, and Under Where?	Snow, Ice and Adapting to Cold— Building Structures Darkness and Light
Spring	Why Plant Flowers? Because... Making a Difference: From Puddles to Oceans	Making Change—Protecting our Shorelines Pollinators
Summer	Insects and Bugs— Respecting all of God’s Creation Summer Sunshine	Summer-Fresh Water Creepy Crawlies
Autumn	A Time to Harvest—Local Resources Welcoming Seasonal Changes	The Art of Observation: Colours, Change and Transitions Gratitude and Harvest



It is important to note that these lessons are meant to guide teachers during their initial foray into outdoor education; these are not meant to be the sole lessons used for outdoor learning, nor are these lessons meant to stand alone, done once and forgotten. It is imperative that teachers feel supported as they take on this challenge, and these lessons will support teachers during this process.

In 2007, the Ontario Ministry of Education published “[Shaping our Schools, Shaping our Future](#)”. We recommend this text as an additional support as you embark on the journey of taking learning outdoors. An important note in this document is that “*Environmental education seeks to promote an appreciation and understanding of, and concern for, the environment, and to foster informed, engaged, and responsible environmental citizenship. Effective environmental education incorporates problem solving, hands-on learning, action projects, scientific inquiry, higher order thinking, and cooperative learning, and employs relevant subject matter and topics that actively engage students in the educational process.*”

You will note that the lessons in this resource are meant to guide students through the inquiry process. For example, an outdoor learning day focused on “Summer Sunshine” (Primary, Summer) could lead to an inquiry about planets and moon cycles. A lesson plan on “Gratitude and Harvest” (Junior, Autumn) could lead to students planning a community giving garden.

It is our expectation that learning will blossom naturally through inquiry and time outdoors and we encourage you, the teachers, to embrace these natural inquiries and make connections to your curriculum expectations as you journey through the adventure of outdoor learning.

Assessment

As you peruse the lesson plans in this document, you will notice that we have not provided explicit examples of assessment for each lesson. This is a deliberate decision. Because each lesson is unique, and so too are the teachers and students who will be teaching with and learning through them, we encourage you to embrace the Triangulation of Assessment Data, as outlined in Ontario’s [Growing Success](#) in order to tailor assessment to appropriately respond to students’ needs and strengths.

“Evidence of learning matters. When evidence of learning is collected from multiple sources over time in relation to the learning destination... it can serve to increase the reliability and validity of teachers’ professional judgment....”

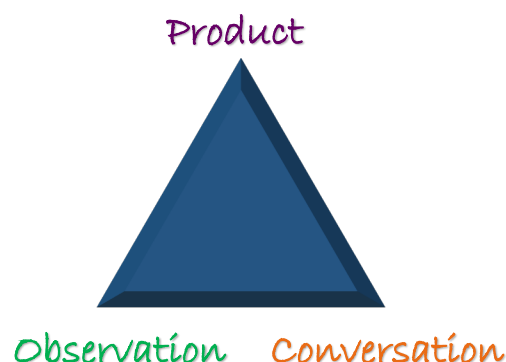
(Growing Success)

Theory of Triangulation

Triangulation means using more than one method to collect data on the same topic. For teachers, this means using more than one method to collect information about our students’ learning.

As indicated in *Growing Success*, teachers will determine student marks and comments based on information gathered through various sources, such as:

- Conversations
- Observations
- Products



Documentation can look different for every teacher and vary from class-to-class and division-to-division. Teachers should select tools that they are comfortable with and work for them. For example, for outdoor learning assessment, teachers may find documentation is made easier by using the following tools:

- an electronic device which includes some features such as voice-to-text technology and apps to organize notes
- pictures and videos
- anecdotal comments on sticky notes or notebooks

Documenting student learning in non-traditional ways can be overwhelming for teachers. *Growing Success* offers some suggestions for engaging with our learners:

“Teachers use a variety of assessment strategies to elicit information about student learning. These strategies should be triangulated to include observation, student-teacher conversations, and student products. Teachers can gather information about learning by:

- designing tasks that provide students with a variety of ways to demonstrate their learning;
- observing students as they perform tasks;
- posing questions to help students make their thinking explicit;
- engineering classroom and small-group conversations that encourage students to articulate what they are thinking and further develop their thinking.

Teachers then use the information gathered to adjust instruction and provide feedback.”

Insomuch as outdoor learning is an alternative to the traditional classroom, so too, is pedagogical documentation and triangulation of data. Bringing learning outdoors affords teachers the perfect opportunity to assess student learning in this way.



EOCCC Outdoor Education Prayer

God of all,

Thank you for the gift of creation. For the mountains that stretch miles high and for the oceans that go on as far as the eye can see. For the deserts with countless grains of sand and rocky islands with windswept pine trees.

Help us to discern your presence in all of your wonders and to be humbled by the great love you show all of your people by sharing this world with us. Give us the wisdom to lead all of our students towards a greater appreciation of your works, and to help them to shine like the sun and the stars in the skies above.

Dear God, guide us to be stewards of your creation and to protect and cherish the blessings of nature that in your infinite love you made to share with your children, yesterday, today and tomorrow.

Amen

**Teddy Charles
OCSB 2019**



A Prayer for our Earth

*All-powerful God, you are present in the whole universe
and in the smallest of your creatures.*

You embrace with your tenderness all that exists.

*Pour out upon us the power of your love,
that we may protect life and beauty.*

*Fill us with peace, that we may live
as brothers and sisters, harming no one.*

*O God of the poor,
help us to rescue the abandoned and forgotten of this earth,
so precious in your eyes.*

*Bring healing to our lives,
that we may protect the world and not prey on it,
that we may sow beauty, not pollution and destruction.*

*Touch the hearts
of those who look only for gain
at the expense of the poor and the earth.
Teach us to discover the worth of each thing,
to be filled with awe and contemplation,
to recognize that we are profoundly united
with every creature
as we journey towards your infinite light.*

We thank you for being with us each day.

*Encourage us, we pray, in our struggle
for justice, love and peace.*

**Pope Francis published this prayer in his Laudato Si' encyclical, and is meant for sharing
with all who believe in a God who is the all-powerful Creator**



Outdoor Learning: Learning in Nature, Learning with Nature, Learning to Respect Nature

“There is little doubt that outdoor and experiential learning impacts students’ learning. It helps make learning relevant, meaningful and authentic by engaging learners through hands-on experience. Abstract concepts and knowledge learned within the classroom make much more sense when set in a real-world context. Regular curriculum subjects can be brought to life outside the classroom, by using the senses...[students] can see, touch, smell, hear and taste things for themselves, which helps to solidify learning and create a buzz of excitement that promotes a love of learning through student-led discovery. So why not make structured outdoor learning an integral part of every school day?”

(Why on Earth Do We Trap School Children Inside Four Walls to Learn? - 2018)

There are numerous arguments evidenced by vast amounts of research which supports the idea that children need to be taken outdoors to learn in and with nature on a consistent basis. Evidence suggests that outdoor learning experiences are impactful since student engagement is heightened, knowledge and understanding is consolidated, and focus (especially for those students who struggle with focus indoors), is improved. Learning in the outdoors has also been argued to boost creativity, enhance health and well-being, facilitate the development of social skills and independence, as well as improve risk-assessment abilities in children. With all of this research, information, and evidence, why is it then, that many teachers and their students remain indoors to learn, and why is this a tradition that needs to be transformed?



Of primary concern in our fast-paced, technologically charged world, is the fact that children are spending less and less time outside. “The UN Convention of the Rights of the Child recognizes play as every child’s basic right. But play is becoming extinct. Global studies, across generations, have confirmed outdoor children’s play has been declining, across all age groups, for decades” (“Let Them Play!”, B. Hyndman: 2019). In his article *Let Them Play!*, Hyndman identifies several factors as the reasons for the decline in the number of hours children spend outside playing: the advancement and increased use of technology and electronic devices, hectic family schedules, helicopter parenting, and urbanization.

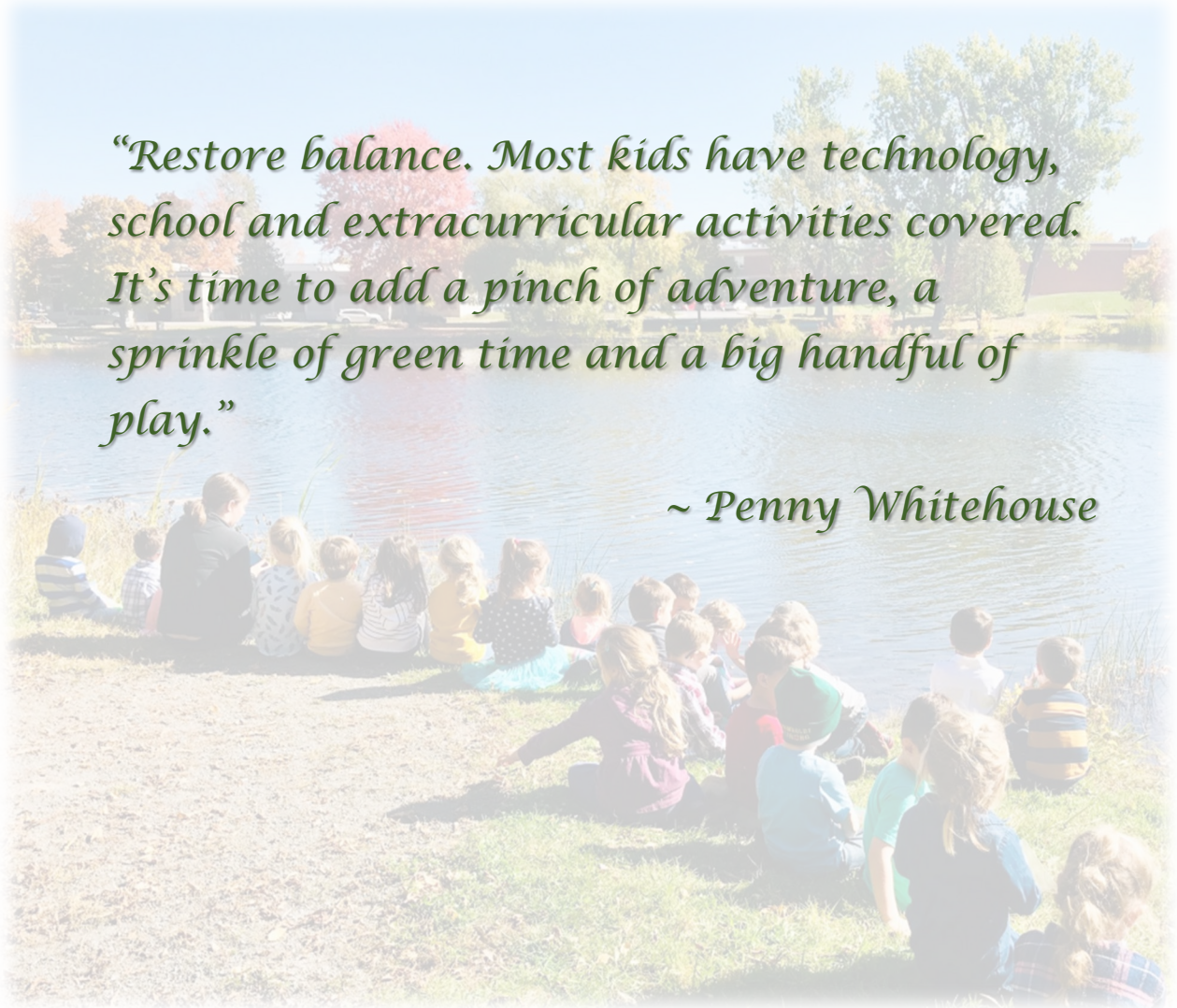
Growing up in the 21st century is markedly different than in years past. Children no longer spend hours playing outside, making up games and running about. Instead, children are spending free time online, interacting with their friends on social media and using their creativity and problem-solving skills to beat virtual games instead of real-life problems. The prevalent use of electronic devices and social media is pointed to as the principal reason for children staying indoors to play. “On average, children aged 5 to 16 years-old are now spending over 6 hours a day looking at a phone or screen. The amount of time children are spending on smart devices isn’t just concerning parents anymore – scientists and governments across the world are now taking an active interest in the negative effects of this behaviour, including disturbed sleep patterns, slower development in social and life skills, decrease in physical health, problems with self-confidence and increased anxiety, and increased susceptibility to brainwashing” (The Problem of Children and Technology: Getting Children off Their Mobile Phones and Screens - <https://www.fing.com/news/getting-your-child-off-their-mobile-phones-screen>).

In addition to screen-time cutting into time spent outdoors, hectic after-school schedules and the impact of helicopter parenting are also playing a role. “Parents’ jobs and children’s extra-curricular activities also contribute.



Additionally, the modern parent is more cognizant and conscious of social and environmental issues which results in parents limiting time outside as a way to protect their children from strangers, traffic, pollution, and bullying. Modern parents are more likely to accompany children...or keep them indoors altogether” (*Let Them Play!*, 2019: pg. 3).

Screen-time, modern parenting, and the fact that more than 50% of the world’s population lives in an urban setting, which is characterized by less natural spaces lends itself to a large majority of today’s children suffering the effects of the Nature Deficit. Richard Louv defines this Nature Deficit as a disorder suffered by someone who has been alienated from nature as a result of technological advancements and urbanization limiting interaction with green space. “An expanding body of scientific evidence suggest that nature deficit disorder contributes to a diminished use of the senses, attention difficulties, conditions of obesity, higher rates of emotional and physical illnesses, as well as weakened ecological literacy and stewardship of the natural world” (Children and Nature Network: 2019).



“Restore balance. Most kids have technology, school and extracurricular activities covered. It’s time to add a pinch of adventure, a sprinkle of green time and a big handful of play.”

~ Penny Whitehouse



An extensive body of research suggests that spending time outdoors and connecting with nature contributes positively to children's development, health, and well-being:

Benefits of Outdoor Play

- **Learning:** *Playing outside helps children to develop their learning abilities. Children learn through play, which is a fun way for children to learn new information and skills. As well as this, outdoor learning encourages children to think of learning as an ongoing process instead of just something done in a classroom.*
- **Creativity:** *Away from the constraints and confinement of indoor play, being outside children's imaginations are often stimulated by the objects around them and they quickly tap into their creativity.*
- **Health:** *With more room to play in, children are often more active when outside, which helps them to build strong bones and good fitness levels, while also enabling them to burn off extra energy and calories. As well, being in the sunshine, even in the winter, means children naturally absorb vital vitamin D.*
- **Social Skills:** *As outdoor spaces are usually less crowded than indoors, it is less intimidating and helps children to naturally come out of their shells and be more social. This means that children will be more willing to join in games and activities, they will also be more likely to talk to different children and make new friends. This all encourages children to learn social skills and how to interact with other children away from adult supervision.*
- **Well-being:** *Being outside means that children naturally get vitamin D, which is proven to help improve moods and create a positive mental attitude. The freedom of the outdoors also encourages children to get rid of built up energy, particularly if they tend to be fidgety when sitting for long periods of time – this leads them to becoming calmer and...more focused.*
- **Independence:** *The large space offered outdoors means that when outside, children are often away from direct adult supervision. This helps them to learn independence when socially interacting with other children, as well as learning to play by themselves. They learn how to take turns playing games, to pick themselves up when they fall, and how to negotiate unfamiliar equipment, resulting in children learning how to be independent and self-reliant.*
- **Explore:** *Often outdoor play has a little more risk than indoor. Outdoor play can help children to learn to push their boundaries and become good at risk-assessment. It also teaches them to explore new [things] and become confident in learning to try new things without being guided by adults.*

Source: *Seven Benefits of Outdoor Play*, 2019

While the benefits noted above concerning time spent outdoors are important, of particular relevance to teachers are the benefits and the impact that spending time outdoors can have on students' learning. "Integrating learning and outdoor experiences...provides relevance and depth to the curriculum in ways that are difficult to achieve indoors. Learning outdoors is part of the wide range of practical approaches to developing skills...Outdoor learning



offers many opportunities for learners to deepen and contextualize their understanding within curriculum areas, and for linking learning across the curriculum in different contexts and at all levels” (Curriculum for Excellence Through Outdoor Learning, 2010: pg. 5 and 8). When learning in the outdoors, students engage their senses and can then make connections between abstract concepts and the real-world in an experiential and hands-on context. Students are active participants in the learning process – this in turn helps the learning stick. “Learning outside the classroom...fosters in-depth, real-life, hands-on learning in various different, stimulating, emotionally engaging learning environments – something we know from brain research to enhance memory, long-term learning and understanding of complexity” (Learning Outside the Classroom – The Forest Pedagogy of the 21st Century, 2017: pg. 2). As such, it makes sense that teachers take students outside to learn.



But, how often should outdoor learning take place? Claire Warden, the founder of nature Kindergartens in Scotland, author, and world-renowned education consultant, explains: “[Inside] experiences [should] link to outdoor experiences and spaces beyond...[Planning] lines of thought go across these three spaces. Rather than it be three disjointed spaces, you’re actually making sure there’s connection for children in their learning” (Nature Pedagogy – Inside, Outside and Beyond, 2016: pg. 2). Warden describes planning for outdoor learning as the exercise of nature pedagogy. “[What] people have done is they have taken the jigsaw table from inside and they carry it outside; they’ll say “here you are, learning in nature”...[but] that’s not it really...you’ve moved the table, but your pedagogical thinking and methodology hasn’t changed” (Nature Pedagogy – Inside, Outside and Beyond, 2016: pg. 3).

The methodology of outdoor learning involves identifying specific learning goals and identifying ways in which natural objects can be used or engaging with the natural environment can bring the curriculum concepts to life. The lessons are described as less teacher-led and less formal, and are often characterized by hands-on, sensory activities that involve higher-order thinking skills like problem-solving, innovation, application of knowledge and understanding, and collaboration.



Proponents of outdoor learning suggest that teaching which reflects nature pedagogy also dictates that outdoor learning events are not just “box ticking” events. It is not enough to plan a handful of outdoor events every few weeks, months, or even school year – it needs to be more than that. Instead, teachers are being challenged to “blur the divide between indoor and outdoor education and make them a connected part of every school day, with equal value and importance” (Why on Earth Do We Trap School Children Inside Four Walls to Learn? 2019: pg. 3).

It is argued that not only will children’s academic learning be stimulated and bolster from outdoor learning, but it will also foster a love and appreciation for the outdoors in children. “Learning in [the outdoor] environment gives students an appreciation and love of the natural world. If delivered professionally and sympathetically, outdoor lessons enable children to make connections to and within the environment. Given time, this leads them towards a profound recognition of their impact on the world. They see how resources are not limitless [and] they also learn that there are ways in which we manage and sustain these resources...they understand



green issues not just intellectually but also at a deeper, intuitive level” (Outdoor Learning: The Natural World Yields Results, 2019: pg. 2).

Brain research explains that the outdoor context is the kind of context that is needed for deep and meaningful learning to happen and stick. Medical and paramedical professionals acknowledge that being outdoors is good for physical health and well-being, social development, and inter/intrapersonal skills. Additionally, outdoor learning will foster environmental literacy in our students, “...[fostering] informed, engaged, and responsible environmental citizenship” (Shaping Our School, Shaping Our Future 2007: pg. 6). Taking students outside to learn is good pedagogy.



Sources:

Let them Play! (<http://theconversation.com/let-them-play-kids-need-freedom-from-play-restrictions-to-develop-117586>)

Outdoor Learning: The Natural World Yields Results (<https://www.theguardian.com/teacher-network/2012/sep/06/outdoor-learning-forest-school-pedagogy>)

Why on Earth Do We Trap School Children Inside Four Walls to Learn? (<https://www.outdoortopia.org/post/bringing-classroom-education-outside-in-our-schools>)

Learning Outside the Classroom: The Forest Pedagogy of the 21st Century (<http://forestpedagogics.eu/portal/2017/12/15/l/>)

Nature Pedagogy: Inside, Outside, and Beyond (<https://www.teachermagazine.com.au/articles/nature-pedagogy-inside-outside-and-beyond>)

Seven Benefits of Outdoor Play for Children (<https://www.fawns.co.uk/blog-posts/seven-benefits-outdoor-play-children/>)

Shaping our Schools Shaping our Future: Environmental Education in Ontario Schools (Ontario, June 2007)

Curriculum for Excellence through Outdoor Learning (<https://education.gov.scot/Documents/cfe-through-outdoor-learning.pdf>)

Natural Curiosity 2nd Edition: A Resource for Teachers (The Importance of Indigenous Perspectives in Children’s Environmental Inquiry), 2017.

Dirty Teaching by Juliet Robertson (2014)



Honouring Indigenous Principles of Learning (Creating a Holistic Learning Experience for All)

"We have an old, out-of-date system. We need to redefine "school," "classroom," and "learning" and we need to teach differently: recognize and support different learning styles, embrace local curriculum, understand the connection to the land/place, and appreciate the importance of language and culture."

(Aboriginal Worldviews and Perspectives in the Classroom: p. 39)

In North America, school is considered an academic experience. There is a strong emphasis on achievement measured using tests, exams, projects, and standardized assessments, especially in the intermediate, secondary and post-secondary environments. These measures are reflected in the form of a percentage which equates to either having a strength or weakness in a subject when compared to a set benchmark that is named "at standard".

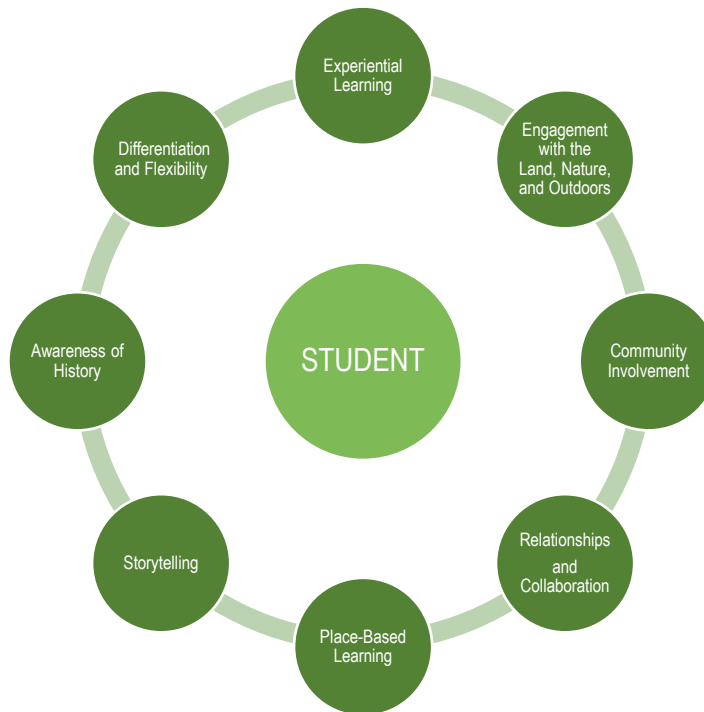
While the delivery of literacy and mathematics curriculums to support academic achievement is important, delivery and assessment of these and other curriculums must be differentiated so to engage all students as active participants in their learning and to support all learners in achieving. Researcher of Indigenous Pedagogy, Pamela Rose Toulouse Ph.D., argues, "Cultural diversity truly describes the peoples of Canada and therefore no one-size-fits-all exists when it comes to curricular content...Children and youth require a safe space that affirms diversity and identity...A vision of success that is highly valuable for all students is a vision based on the recognition that identity, culture, language and worldview are equally critical to literacy, numeracy and standardized notions of assessment." (*What Matters in Indigenous Education*; p. 5-6)

An Indigenous view of learning, when integrated into classroom culture and instructional practice, creates the kind of learning space and learning experience which Toulouse describes. While it is true that there is much diversity that exists among Indigenous groups, their languages, cultures, and traditions, there is commonality regarding pedagogy of learning (*how learning happens*) across First Nations, Métis, and Inuit populations. Authors of *Natural Curiosity: A Resource for Educators – The Importance of Indigenous Perspectives in Children's Environmental Inquiry*, Anderson, Chiarotto, and Comay propose that "If we begin to understand and appreciate Indigenous wisdom traditions, and work ethically with Indigenous people to bring those traditions to bear on how we learn, we can improve any education system" (*Natural Curiosity 2nd Ed.*; pg. 5).

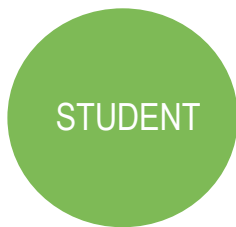
It is said that for Indigenous students to be successful within the educational context, several common big ideas or principles rooted in Indigenous pedagogy of learning must be acknowledged and present within the learning experience. "What matters to Indigenous peoples in education is that children, youth, adults and Elders have the opportunity to develop their gifts in a respectful space...It is about fostering identity, facilitating well-being, connecting to land, honouring language, infusing with teachings and recognizing the inherent right to self-determination" (*What Matters In Indigenous Education*; p. 4)



Indigenous Perspective of Learning



“As a result of the epistemological principle of holism, Indigenous pedagogies focus on the development of a human being as a whole person. Academic or cognitive knowledge is valued, but self-awareness, emotional growth, social growth, and spiritual development are also valued.”
(*Indigenous Epistemologies and Pedagogies - Pulling Together: A Guide for Curriculum Developers*; p. 2)



It is worthwhile to note that it is the student that is at the center of the educational context when considering an Indigenous worldview of learning. It is of paramount importance that the teacher recognizes that the student's strengths, needs, and interests drive instruction, and that in addressing student needs, strengths, and interests, the mandated curriculum is then uncovered through the learning experience. Additionally, Indigenous pedagogy of learning supports the development of the whole child which includes the physical, emotional, intellectual, and spiritual domains. “Quality learning extends beyond literacy, numeracy and standardized curriculum. [Learning] is inclusive of the preceding, but also values the physical (health), the emotional (social-emotional), the intellectual (citizenship) and the spiritual (creativity)” (*What Matters In Indigenous Education*; p.7)



Experiential Learning

Instructional planning and practice that is student-centered will use inquiry and experiential learning to introduce, explore, and apply learning concepts in an engaging and relevant way so that students will see the connectedness of the learning to themselves and to the world around them. “Indigenous pedagogies are experiential because they emphasize learning by doing. In traditional pre-contact societies, young people learned how to participate as adult members of their community by practicing the tasks and skills they would need to perform as adults. In a contemporary setting, an emphasis on experiential learning means a preference for learning through observation, action, reflection, and further action” (Indigenous Epistemologies and Pedagogies -Pulling Together: A Guide for Curriculum Developers; p. 2).

Placed-Based

In the Indigenous community, Elders and knowledge keepers are revered and respected for the knowledge and wisdom that they carry and can therefore teach to others.

Teachers who are incorporating an Indigenous worldview of learning into their planning and practice are encouraged to reach out to and connect with community partners (i.e., Elders, knowledge keepers, Indigenous students’ family members) who can teach about the place from which the students come, sharing its history, traditions, and stories, thereby learning in a place-based context.

Community Involvement

“Knowledge is situated in relationship to a location, experience, and group of people. [It is important to] start with a local connection and work out from there because protocols and worldviews are diverse across our province, and so they have to be respected in the local context” (*Aboriginal Worldviews and Perspectives in the Classroom: Moving Forward*; pg. 22-23).

Relationships and Collaboration

According to Indigenous teachings and perspective, we are related to each other, to nature, and to the spiritual world. As such, learning experiences must provide opportunities which emphasize learning in relationship with others (i.e., classmates, family, and community members). Students should also be given the chance to engage with nature and the outdoor space. “It is a good place for social, emotional, and spiritual learning, as well as learning about ecology, science, and mathematics. Learning is in the land – history and story are in the land. Students need to have more connection with nature as part of their education. This weaves understanding at a deeper level and students develop a synergy with the place where they live” (*Aboriginal Worldviews and Perspectives in the Classroom: Moving Forward*; p.24). Finally, learning opportunities must also provide chances for students to explore their own thinking and understanding and to reflect about their relationship with others and with the world around them.



Engagement
with the Land,
Nature and the
Outdoors

Indigenous people have a strong connection to and great respect for the land. For Indigenous peoples, the land holds much knowledge and learning happens on the land. Teaching from an Indigenous perspective means taking instruction and learning outdoors as much as possible. It is in learning about the land, its medicines, its gifts, and its lessons that a greater connection with the land is established. “Our respect for and connection with the land informs our understanding of responsibilities and roles and our sense of our relationship to all living things. How do our decisions impact the land around you? How does where we are influence what we view as important and what to learn? How do our decisions about what is important and how to be relate to [the land]? For many people, this seems philosophical, but it is actually very pragmatic...practical. Look after the land and the land will look after you” (*Aboriginal Worldviews and Perspectives in the Classroom: Moving Forward*; p. 24).

Awareness of
History

To plan and instruct students with an awareness of history carries implication. It means that teachers must ensure that the story of Canada’s history shared with students is one that acknowledges and includes the experience and voice of Indigenous peoples, including and up to present day. Of special importance is local history and the experience, stories, and contributions of the Indigenous communities. “Students need to think about how history affects “me” and learn to look from the eyes of those who experienced it: this is the connectedness – taking everyone’s ability to perceive and building empathy with the sharing” (*Aboriginal Worldviews and Perspectives in the Classroom: Moving Forward*; p. 20).

Storytelling

For Indigenous people, there is power in story. Ways of knowing and doing are learned through story, through the tradition of passing on cultural teachings, values, and beliefs in the form of story. Learning and incorporating Indigenous traditional stories that are told within communities close to your learning space will help students connect more to their learning. “Rendering knowledge as story is an attribute of [Indigenous] ways of learning. Making this happen in many ways in the classroom is desirable. Give students the opportunity to apply and demonstrate the skills associated with storytelling: memorizing, internalizing, and re-telling. Metaphor, analogy, example, allusion, humour, surprise, phrasing, etc. are storytelling devices that can be applied when explaining almost any non-fiction concept. Make an effort to use devices of this sort in all subject areas” (*Aboriginal Worldviews and Perspectives in the Classroom*; p. 30).



Differentiation and Flexibility

Teachers who are teaching with the student at the center of their planning and instruction will approach teaching and assessment with flexibility, incorporating differentiation. “Differentiated instruction is a teacher’s response to learners’ needs [considering] content, process, product, and environment, and according to students’ readiness, interests, and learning styles” (*Targeting Achievement for All: Universal Design for Learning*; p. 2.10). When an teacher differentiates instruction, the teacher is better able to support all learners at their various points along the continuum of learning. Indigenous pedagogy of learning calls on teachers to “...bring diverse views into the classroom, give students a voice, and help them feel comfortable at standing up and saying who they are...respond to their [learners’] goals and interests...and [allow] huge diversity in ways to represent what you know” (*Aboriginal Worldviews and Perspectives in the Classroom: Moving Forward*; p. 48).

Teachers are encouraged to use best practice when they are teaching and planning for their students; however, professional development is varied, and methods presented as best practice are diverse. What teachers need to keep in mind is that best practice is always reflective and responsive, answering the question, “*Why this way for this student at this time?*”.

Indigenous pedagogy is a reflective and responsive pedagogy, putting the student and their interests, strengths, and needs at the center of instruction. In answer to the question, “*Why an Indigenous lens?*”, authors Anderson, Chiarotto, and Comay simply answer, “Indigenous perspectives belong in all times, and are contemporary in ways that extend far beyond cultural content for schools. Indigenous perspectives inform good teaching practice, are applicable to all teachers and students, and are increasingly relevant to mainstream education systems...An Indigenous lens informs learning, in ways that address our present and future, by improving our relationship with the world around us” (*Natural Curiosity 2nd Edition: A Resource for Teachers*; p.6).

In rooting our teaching practice within Indigenous pedagogy, we are creating a culture of learning that is not only student-centered, but also looks to educate the whole child, not just the intellectual domain of the student.

The concept of learning and student achievement is reconceptualized as per Lavoie et al.(2012) in *What Matters in Indigenous Education*: “student achievement...needs to include the physical, emotional, intellectual, and spiritual aspects of the whole being...supported through examining respectful conditions/competencies that fully consider the impacts of the classroom, the school, the community, and the globe” (p. 14).



Resources:

Toulouse, Pamela. (2016). *What Matters in Indigenous Education: Implementing a Vision Committed to Holism, Diversity and Engagement*. In *Measuring What Matters, People for Education*. Toronto: March 2016.

Ministry of Education, British Columbia (2015). *Aboriginal Worldviews and Perspectives in the Classroom: Moving Forward*. Crown Publications, Queen's Printer: 2015.

Indigenous Epistemologies and Pedagogies – Pulling Together: A Guide for Curriculum Developers (Chapter 2: Meaningful Integration of Indigenous Epistemologies and Pedagogies)

<https://opentextbc.ca/indigenizationcurriculumdevelopers/chapter/topic-indigenous-epistemologies-and-pedagogies/>

Anderson, D., Chiarotto, L., and Comay J. (2017). *Natural Curiosity 2nd Edition: A Resource for Educators. The Importance of Indigenous Perspectives in Children's Environmental Inquiry*. Quebec: 2017.

CDSBEO. *Targeting Achievement for All: Universal Design for Learning*.



Outdoor Learning Opportunities in Urban Settings and “Nearby Nature”

The benefits of the outdoors surrounding nature has become an area of interest in research. Researchers have been able to uncover many benefits of being outdoors and surrounded in nature. For example, evidence supports the idea that people who take walks in forests have lower levels of stress and children with attention difficulties are found to have better focus when outdoors or after having spent time outdoors interacting with nature (*Healthy Parks, Healthy People* – Ontario Parks: April 2019 - <https://www.ontarioparks.com/parksblog/mental-health-benefits-outdoors/>).

Unfortunately, not every school is located near a forest or wooded area, nor does every school have close-by access to a riverbed, marsh or bog or conservation. Many schools are located in urbanized areas like larger towns and cities and are surrounded by buildings, busy streets and concrete sidewalks or parking lots with very little nearby wildlife. The good news is that even the most urban area can offer some amazing opportunities for students to learn in the outdoors.

Juliet Robertson, author of *Dirty Teaching: A Beginner’s Guide to Learning Outdoors* (2014), encourages teachers who are located within concrete jungles to take a step back and consider what the outdoor space around the school does have and how these features can best be used to bring the curriculum outdoors.

Robertson suggests:

- Transforming fences into easels and vertical surfaces or workstations. Weaving ribbons to make patterns in the chain-link of a fence or fastening loose pieces of eaves troughs to a fence to make a water wall to experiment with is a great way to incorporate fencing into an outdoor lesson plan.
- Following cracks in pavement or lines on the sidewalk or in parking lots to march along or to follow using creative movement patterns. Investigate linear measurement and angles by exploring lines and cracks in pavement and walls.
- Using doors and windows found on the outside of buildings to investigate the properties of shapes, symmetry, and measurement concepts like perimeter and area.
- Studying the science of reflection with the help of windowpanes and puddles.
- Investigating textures by comparing different surfaces found around the school lot (brick, pavement, glass, wood, etc.).
- Using loose parts such as tarps and rope to build structures incorporating fence lines, nooks and crannies or posts.
- Observing bugs and other small animal life in the school yard and then using these observations to spark a science inquiry or a writing assignment.
- Experimenting with shadows on the pavement or on the walls of a building in order to see how shadows are formed; then creating a dramatic presentation using hand shadows as characters.

(Source: *Dirty Teaching: A Beginner’s Guide to Outdoor Learning* - Chapter 9)



Of course, incorporating the outdoors into learning opportunities is not the only reason to head outside to learn. Another reason is to help children connect with nature; seeing and appreciating the beauty that the natural world has to offer. In an urban setting, where green space may be limited, the teacher can creatively design learning opportunities by bringing nature “nearby” to the students.

Loose parts

Teachers in an urban environment can bring in natural items such as branches, pinecones, rocks, twigs and string for students to create natural structures. Students can also bring in flowers and leaves that can be used to create natural works of art such as mandalas. Local florists or grocery stores may be willing to donate flowers and plants that are finished blooming to a school. Stones and pebbles can be used for sorting, classification and measurement activities. There is no shortage of ideas of ways to uncover curriculum with natural loose parts!



Nature Squares

Talk to your school administrator about the possibility of leaving a small portion of the school yard field (1 or 2 square metres) uncut and protected from regular grass and field trimming. Over the spring, summer, and fall natural plants will grow in the area and create a micro ecosystem that students can study and explore. There is an amazing amount of plant and insect diversity in even just one square metre of untouched school yard! These natural areas could also be used to create habitats for pollinators such as butterflies by planting food sources such as milkweed.



Alternatively, a square metre garden can be built to allow students the opportunity to plant and harvest different types of plants such as flowers, vegetables or fruits. This can become a very rich learning task incorporating science, math, health and social studies. The garden can be subdivided with strings to allow for different sizes of soil plots and students can observe and compare the growth of different types of plants. The square gardens will also attract a variety of different animal life, allowing for even more exploration of natural diversity.





Orienteering

Students today have far less understanding of how to navigate their immediate environment. Some children who live in urban areas demonstrate never having learned how to read street signs - this could be because their daily routine involves going from an elevator, to an underground garage, and then by car to school. They've only rarely had the chance to navigate safely through their own neighbourhoods independently. Navigation skills are especially important for students who are English language learners, who may not be comfortable or able to ask for directions or help if needed. In these cases, technology is a wonderful complement to exploring the local environment. Tools such as cameras can allow students to visually document different aspects of their surroundings, and capture examples of any natural wildlife that they see while orienteering. Online maps, mobile devices with GPS, and even handheld compasses can be used in a wide range of activities such as scavenger hunts, cardinal directions, procedural reading and writing or even to find clues for activities such as breakout boxes.



It's Snow Good

Canada is blessed to have snow as a resource to be used for learning and even the most urbanized area offers opportunities for learning with nature when engaging with fallen snow and other frozen precipitation. There are many concepts that students can uncover and explore using snow. For example, students can investigate the effects that snow has on the earth and the root systems, trees, and animals that hibernate underground during the winter months. Students can use snow to create sculptures for art, investigating the concepts of balance and structure while doing so. Studies in volume and mass between frozen and melted snow will help to uncover the concepts of states of matter. Students can investigate and innovate devices or inventions to either stop or assist the flow of water after a rainfall using loose parts such as twigs and small stones. Finally, students can build wind or elastic powered boats that can float on deeper puddles of water when the snow begins to melt, studying the flow of the running water.





Schoolyard Greening

Speak with your administration about the possibility of applying for grants that can assist schools in greening their school yards. Small changes such as planting a tree or adding a micro-ecosystem to your yard can yield huge benefits. “Naturalized school grounds positively impact children’s well-being and provide greater opportunities for creative and imaginative play” (Robertson, 2014: p. 137). Robertson also explains that if you focus on learning about and supporting biodiversity, it is better for wildlife native to the environmental setting as it strengthens natural relationships. Following the link provided below will connect you to many different organizations which offer funding to help with community greening projects: [Environmental Funding Opportunities](#) .



Lesson Overview

A brief overview of the lesson plans in this resource

Here, There and Under, Where?

Primary – Winter

"Animals are God's creatures. He surrounds them with his providential care. By their mere existence they bless Him and give Him glory. Thus men owe them kindness."

The Catechism of the Catholic Church

<https://www.ncronline.org/blogs/eco-catholic/st-francis-alliance-proclaims-protection-all-gods-creatures>



The title of the lesson, grade level and applicable season will be identified in this section

Catholic Graduate Expectation(s) in Action:

I believe that God is an awesome God

I co-operate with others in all that I do

I value everyone's work

I respect and listen to others

I follow rules of fair play

I work hard in school so that I can build my community and make it a better place

CGE's that link to the lesson are identified here!

Faith Connections:

Where Do the Animals of the Earth Come From?

Share the portion of the Creation Story which explains the creation of animals with students, and discuss with them where they think that the animals of the earth came from (for the story, see: <https://www.biblegateway.com/passage/?search=Genesis+1&version=NR>)

²⁰ And God said, "Let the waters bring forth swarms of living creatures, and let birds fly above the earth in the open sky." ²¹ So God created the great sea monsters and every living creature that moves, of every kind, with which the waters swarm, and every winged bird of every kind. And God saw that it was good. ²² God blessed them, saying, "Be fruitful and multiply and fill the waters in the seas, and let birds multiply on the earth." ²³ And there was evening and there was morning, the fifth day.

²⁴ And God said, "Let the earth bring forth living creatures of every kind: cattle and creeping things and wild animals of the earth of every kind." And it was so. ²⁵ God made the wild animals of the earth of every kind, and the cattle of every kind, and everything that creeps upon the ground of every kind. And God saw that it was good.

- What birds are you familiar with? What makes birds different from other kinds of animals?
- What kinds of creatures live in the water? What makes water creatures like fish different from creatures that live on land?
- What is the difference between a domestic animal and a wild animal? What examples of each are you familiar with?

Connections between the Catholic faith and Jesus' teachings and the lesson's topic will be identified in this section. Relevant scripture readings and prayers, provocations for tying the lesson's topic to our faith are presented.



Principles of Indigenous Learning:

- Awareness of History
- Relationships/Collaboration
- Community Involvement
- Story-telling/The Power of Story

Each lesson in the resource relates differently to the Principles of Indigenous Learning. This section will identify the principles that each lesson honours.

Envision (Minds On)

Think about the ways that we as human beings adapt to the snow and cold of the winter season. Create a chart of the students' thinking.

The Envision section of the lesson is the Minds On component of the learning experience. In this space, a provocation for learning will be introduced to help get the lesson and learning started with your students.

Sow (Action)

Like human beings, animals adapt in many ways in order to survive the winter. Some animals make physical changes to suit the cold, others migrate to warmer locations, and some animals enter hibernation. Discuss some of the following animals from the eastern Ontario area: wood frogs, deer, white-tailed deer, snowshoe hare, beaver, barred owl, chickadees, moose, black bears, skunks, red foxes. Predict what adaptation strategy/strategies each of the animals use to survive the cold months. Do some investigation to find out if what you predicted about the animal is true. Create a media presentation (e.g. Power Point) or publish a classroom text similar to *Over and Under* or *Secrets of Winter* – see Resource section below) to present your findings.

The Sow section of the lesson is the action component of the learning experience. Instructions for an activity, outing, experiment, or task will be outlined for the educator in order to engage the students with the topic of

Nurture (Consolidation)

Now that you've done some research, distinguish the ways that humans and animals are different from each other when considering ways to adapt to winter weather. Create a diagram to present your conclusions.

The Nurture section of the lesson is the consolidation component of the learning experience. Prompts for application of and/or extension of the students' learning will be offered in this space. Ideas for connecting learning across curriculum strands will also be presented

Additional Ideas for Applying and Extending Learning:

- Take a winter walk and observe and discuss evidence of some of the animals in your area or hibernate during winter. What evidence can you find?
- Create a dictionary of terms, a BINGO game, or a crossword puzzle to help you learn about words related to winter adaptation (e.g. camouflage, hibernation, migration, etc.)
- Examine the different legs and feet of the animals that stay here in the winter. Focus on the White-tailed deer and Snowshoe Hare and discuss how their adaptations suit these animals. Have 'snowshoe versus no snowshoe' races. Which team would you rather be on? Try this game in shallow and deep snow periods and discuss the differences noticed by the students!
- Try an experiment demonstrating how blubber or fat is useful as insulation: *SciShow Kids – Fun with Blubber* <https://www.youtube.com/watch?v=DQGAcghkGs>.
- Write a story/ print a speech bubble of what one animal studied would say to you about their adaptation strategies used for surviving the winter months.

Curriculum Connections

Kindergarten

Religion

BL1: demonstrates an awareness of God as Creator of all things through their everyday interactions, explorations with nature and in Sacred Scripture

LC3: understand that friendship is fundamental to forming the larger Christian community;

The Curriculum Connections section identifies content areas and expectation that the lesson connects to.



Mentor Text Connections

Bear Snores On

By: Karma Wilson, Jane Chapman (Illustrator)

One by one, a whole host of different animals and birds find their way to the cave and into Bear's cave to warm up. But even after the tea has been brewed and the corn has been popped, Bear just snores on! See what happens when he finally wakes up and finds his cave full of uninvited guests -- all of them having a party without him!

https://www.goodreads.com/book/show/867248.Bear_Snores_On

Make a note of the animals in the story and where they fall in the chart on Animals in the Winter.

In the Mentor Text Connections section, a handful of picture books, short stories, and novels which connect to the topic or theme of the lesson have been identified. In some cases, the mentor texts are used explicitly in the lesson, but in others the texts offer an opportunity for provocation to get the students thinking about the topic of the lesson or as a tool for connecting to or extending the students' learning.

Additional Resources

SciShow Kids – Animals With Winter Coats (4:29)

Have you ever wondered how animals stay warm in the winter? Learn all about their natural cozy coats and the other awesome tricks they use to make it through the cold conditions!

<https://www.youtube.com/watch?v=ON7FGPeykFE>

Getting Ready for Hibernation! (3:36)

There's a chill in the air where Jessi and Squeaks live, and that means it's time for some animals to start the long, yearly nap called hibernation! Learn why animals hibernate and how they get ready to sleep for months at a time!

<https://www.youtube.com/watch?v=OhrhcsICrE8>

Wild Kratts – Exploring Extreme Animal Habitats (15:39), (from 7min to the end)

<https://www.youtube.com/watch?v=lgq2JhijSew>

Nature-Based Games (Cache game)

Twin Eagles Wilderness School

<http://www.twineagles.org/fun-outdoor-games.html>

Hibernation Song

By: David Burba

<https://www.youtube.com/watch?v=BstmnCYwAE8>

Secrets of Winter

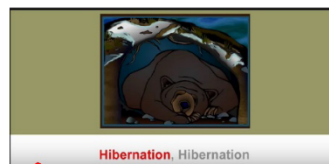
By: Carron Brown

Who is out and about during wintertime? Shine a light behind the pages and discover a natural winter world full of surprises!

<https://www.goodreads.com/book/show/28149050-secrets-of-winter>



In the Additional Resources section, relevant resources such as videos, apps, additional mentor texts, websites, and tech programs which can enhance or expand the learning experience are listed.



Evergreens in a Winter Forest

Primary – Winter

Tree Spirit Prayer

(By Hanoochi)

Honored Tree Spirit, I give thanks to you,
...for the singing birds that you shelter
...for the music you sing in the breeze
...for listening to the voices of the creatures
...for echoing the ancestors' strength.



<http://www.starstuffs.com/prayers/circle.htm#treespirit>

Catholic Graduate Expectation(s) in Action:

I care about and respect God's creation and everything in it!
I know that all life is precious.
I respect and protect the world and all that is in it.

Faith Connections:

Evergreens and the Christmas Season

When we think of evergreens, we often think of the Christmas season because the evergreen has become a popular symbol of Christmas. An evergreen is erected in many people's homes to mark the Christmas season – it is usually decorated with lights, colourful ornaments, and tinsel. A star or an angel is often placed on the topmost branch – for many, to commemorate the birth of Jesus.

Consider the story of St. Boniface and the origin of the Christmas tree to find out about where the tradition of celebrating Christmas with a tree came from:

St. Boniface and the origin of the Christmas tree

Behind the mighty oak stood a young fir tree, pointing like a cathedral spire toward heaven. St. Boniface again spoke to the people, "This little tree, a young child of the forest, shall be your holy tree tonight. It is the wood of peace, for your houses are built of the fir. It is the sign of an endless life, for its leaves are ever green. See how it points upward to heaven. Let this be called the tree of the Christ-child; gather about it, not in the wild wood, but in your own homes; there it will shelter no deeds of blood, but loving gifts and rites of kindness."

(<http://catholicstraightanswers.com/what-is-the-origin-of-the-christmas-tree/>)

Consider putting up a tree in your classroom. What decorations might you use to decorate the tree to communicate to others that it is the tree of the Christ-child (Jesus)?



Another Christmas tradition that involves evergreens is the celebration of the Advent season with a wreath made of evergreen boughs. The word “ADVENT” means arrival or coming, and the time of Advent is celebrated during a 4-week period just before Christmas. Advent is a time for Catholics to remember the why Jesus’ birth is so important to us, and to prepare for his coming at Christmas. The wreath helps us mark this special time. There is much symbolism present in the Advent wreath:

- The wreath is created out of evergreens, which remind us of everlasting life, even in the midst of winter.
- The circle shape of the wreath reminds us that God’s love has no beginning and no end, that it is eternal.
- The red colour of holly or berries that are sometimes added to the evergreens help us to remember the sacrifice that Jesus made by dying on the cross for us.
- Pinecones are sometimes added to the wreath to remind us of new life, which is what Jesus gives to us through his resurrection.
- The wreath usually has four candles (a fifth candle is optional), three purple and one pink, which are lit one at a time as each week of Advent passes:
 - “The **first candle** symbolizes **hope** and is called the “Prophet’s Candle.” The prophets of the Old Testament, especially Isaiah, waited in hope for the Messiah’s arrival.
 - The **second candle** represents **faith** and is called “Bethlehem’s Candle.” Micah had foretold that the Messiah would be born in Bethlehem, which is also the birthplace of King David.
 - The **third candle** symbolizes **joy** and is called the “Shepherd’s Candle.” To the shepherd’s great joy, the angels announced that Jesus came for humble, unimportant people like them, too. In liturgy, the color rose signifies joy.
 - The **fourth candle** represents **peace** and is called the “Angel’s Candle.” The angels announced that Jesus came to bring peace--He came to bring people close to God and to each other again.
 - The (optional) **fifth candle** represents **light and purity** and is called “Christ’s candle.” It is placed in the middle and is lit on Christmas Day” (<https://www.crosswalk.com/special-coverage/christmas-and-advent/advent-wreath-candles-understanding-the-meaning-history-tradition.html>).

As a classroom community, make an Advent wreath to celebrate Advent. Go on a nature walk and look for all of the parts of the wreath that you can obtain from the outdoors: the evergreen boughs, berries, and pinecones. Paper candles can be used instead of real candles if necessary, and a paper flame can be added to each of them as they are “lit” week to week.

- Teach students The Advent Song (<https://www.youtube.com/watch?v=DkTWjhjKHjs>)
- For suggestions for prayers to say with your students during Advent, see: <https://mycatholic.life/catholic-prayers/prayer-for-a-fruitful-advent/kids-prayer-for-a-fruitful-advent/> or <https://dynamiccatholic.com/best-advent-ever/advent-prayers>

Additional Scripture Passages and Faith-Based Texts:

Genesis 1:11-13

Then God said, “Let the earth put forth vegetation: plants yielding seed, and fruit trees of every kind on earth that bear fruit with the seed in it.” And it was so. The earth brought forth vegetation: plants yielding seed of



every kind, and trees of every kind bearing fruit with the seed in it. And God saw that it was good. And there was evening and there was morning, the third day.

Ezekiel 31:5-6

So it towered high above all the trees of the field; its boughs grew large and its branches long, from abundant water in its shoots. All the birds of the air made their nests in its boughs; under its branches all the animals of the field gave birth to their young; and in its shade all great nations lived.

Isaiah 44:14

He cuts down cedars or chooses a holm tree or an oak and lets it grow strong among the trees of the forest. He plants a cedar and the rain nourishes it.

Principles of Indigenous Learning:

- Place-Based/Local focus
- Engage with the Land, Nature, and the Outdoors
- Storytelling/The Power of Story
- Experiential Learning
- Differentiation/Flexibility

Envision (Minds On)

The Evergreen tree is a dark contrast to the white space in a winter forest. Why are these trees so important to the animals in the winter? Read the mentor text “Where Would I Be in an Evergreen Tree?” by Jennifer Bloomgren to your students (see Mentor Text section for more information about the text). Before reading, ask what students know about the word “evergreen”. After reading the text, discuss new learning.

Sow (Action)

- Present to the students that the evergreen trees are also referred to as CONIFEROUS trees.
- Define ‘coniferous tree’ and make a list of defining features
- Make a list of Ontario winter animals and separate them into diurnal (daytime) and nocturnal (nighttime) categories. Do any of the animals use evergreen trees? If so, how?
- Take a nature walk to find a coniferous tree. Can you see any evidence of how animals are using it in the winter (deer tracks, tree cavities, owl pellets, fox/hare/mouse tracks, seed remains, etc.)?
- Sit under the evergreen. What do you notice about the depth of the snow? What animals might also use this to their advantage (i.e. ‘deer yards’, insulation)?

Nurture (Consolidation)

Extend the students’ learning about coniferous trees.

Discuss the similarities and differences between coniferous and deciduous trees using a Venn Diagram with the headings CONIFEROUS, DECIDUOUS, and BOTH. How are coniferous trees and deciduous trees similar? How are they different?



NOTE: The following summarizes the differences between the two types of trees:

1. *Deciduous trees have leaves that fall off during fall and are completely gone during winter while coniferous trees have needles which stay green during the winter.*
2. *Deciduous trees have leaves that change in color (to yellow, orange, or red).*
3. *Coniferous trees bear seeds into cones.*
4. *Coniferous trees are softwood trees while deciduous trees are primarily hardwood.*

RESOURCES:

- <http://www.differencebetween.net/science/nature/difference-between-deciduous-and-coniferous/>
- <https://gardenerdy.com/whats-difference-between-deciduous-coniferous-trees>

Referring to the Venn Diagram produced in discussion with the students, dig deeper into the differences that were highlighted, including:

- 1) Coniferous trees have needles and deciduous trees have leaves.
 - How do the shape of the needles on coniferous trees and the broadness and flatness of deciduous trees impact the way the trees grow and survive during the winter and summer months (how they tolerate heat and cold)?
 - Find out about why deciduous tree leaves change colour and then fall from the tree, but evergreen needles stay green and remain on the tree during the winter.
 - Look at the needles of different trees and figure out a way to remember how to identify them (e.g. White pines have clusters of 5 needles – white has 5 letters). Identify evergreens when out on a walk after this learning has happened. Take pictures of the different kinds of trees you find and create a resource book about the many different coniferous trees in your school yard, the immediate area surrounding your school, in your yard at home, or at a neighbourhood park.
- 2) Deciduous trees bear fruit and nuts, while coniferous trees bear cones.
 - Find out more about the purpose or role of fruits, nuts, and cones which grow on trees?
 - Gather pinecones and sort them into groups and try to determine the evergreen they belong to.
 - Why are pinecones often closed up in the winter months? Conduct the following experiment to help understand how coniferous trees re-seed themselves and the adaptive features they have in relation to water and moisture (<http://mommaowlslab.blogspot.com/2013/02/the-pine-cone-experiment.html>). Draw a picture and label the diagrams appropriately.

Additional Ideas for Applying or Extending Learning:

- What other Christmas traditions are common (e.g. stockings, wreaths, etc.)? Where do they originate from?
- Paint a winter forest scene showing the contrast between dark coniferous trees and the lightness of the deciduous trees (e.g. Birch). The following link shows how to paint a winter forest scene using watercolours: (Winter Birch: A Watercolor Masking Technique https://www.youtube.com/watch?v=OFI_odBrcyc).
- With the help of a community partner, learn about the story of the White Pine and why it is referred to as the Peace Tree by the Haudenosaunee people. What are the teachings that we can learn from the White Pine?



- The cedar tree is an evergreen tree belonging to the pine family. For the First Nations community, cedar is considered one of the four sacred medicines, along with tobacco, sage, and sweet grass. With the help of a community partner, find out why cedar is considered so important to the First Nations people, and find out how it is used in their culture. (For basic, introductory explanations about the four sacred medicines, see: <http://www.dancingtoeaglespiritsociety.org/medicines.php>)

Curriculum Connections

Kindergarten

Religion

BL1: demonstrate an awareness of God as Creator of all things through their everyday interactions, explorations with nature, and in stories including Sacred Scripture

CL5: Explore some religious articles, gestures, and simple rituals used in the life of the Church.

LS2: demonstrate the wonder and awe in the beauty and care of God's creation;

Four Frames

OE1: communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

OE11: demonstrate an understanding and critical awareness of a variety of written materials that are read by and with their educators

OE13: use the processes and skills of an inquiry stance (i.e., questioning, planning, predicting, observing, and communicating)

OE14: demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representation of their findings

OE20: apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts

OE22: communicate their thoughts and feelings, and their theories and ideas, through various art forms

OE29: demonstrate an understanding of the natural world and the need to care for and respect the environment

Grades 1-3

Religion

Grade 1-3

Celebrating

- Find hope and faith in the story of salvation that unfolds through the celebrations of the five seasons of the Church's liturgical year.

Living in Communion

- Appreciate the communal nature of human persons and the communal nature of the Church, with God, and all of God's creation



Living in Solidarity

- Appreciate all of creation as gift and actively fulfill their responsibility to be stewards of God's creation;
- Acknowledge all life as sacred

Family Life

Grade 1

Living in the World -- Appreciating God's Goodness:

E1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

Exploring Human Nature:

E2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Grade 2

Living in the World -- Appreciating God's Goodness:

E1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

Exploring Human Nature:

E2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Reflecting, Responding, and Analyzing:

E3: apply an understanding of the global dimension of human nature in personally relevant contexts.

The Arts

Grade 1-3

Visual Arts

D1: *Creating and Presenting:* apply the creative process (see pages 19–22) to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;

D3: *Exploring Forms and Cultural Contexts:* demonstrate an understanding of a variety of art forms, styles, and techniques from the past and present, and their social and/or community contexts.

Science

Grade 1

Understanding Life Systems -- Needs and Characteristics of Living Things

OE2. investigate needs and characteristics of plants and animals, including humans;

OE3. demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.

Understanding Earth and Space Systems -- Daily and Seasonal Changes

OE1. assess the impact of daily and seasonal changes on living things, including humans;

OE2. investigate daily and seasonal changes;

OE3. demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.



Grade 2

Understanding Life Systems - Growth and Changes in Animals

OE2. investigate similarities and differences in the characteristics of various animals;

Grade 3

Understanding Life Systems – Growth and Change in Plants

OE2. investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow;

OE3. demonstrate an understanding that plants grow and change and have distinct characteristics

Language

Grade 1-3

Oral Communication

OE2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes

Reading

OE1. read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning;

Writing

OE1. generate, gather, and organize ideas and information to write for an intended purpose and audience;

Mentor Text Connections

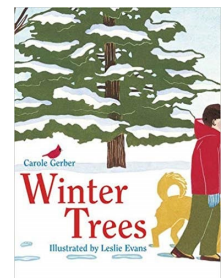
Winter Trees

By: Carole Gerber

"Trees that once had leaves are bare. They're dressed instead in lacy white.
Snow dusts their trunks and coats their limbs with flakes that outline them with light."

Join a boy and his dog as they use their senses of sight and touch to identify seven common trees in the snow covered forest. Intricate illustrations and lyrical text make distinguishing different types of trees easy--even in the middle of winter, when only bare branches stand like skeletons against the sky.

https://www.goodreads.com/book/show/2482799.Winter_Trees

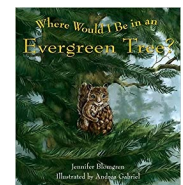


Where Would I Be in an Evergreen Tree?

By: Jennifer Bloomgren

This story-in-verse explores the beauty of the Pacific Northwest through the ecosystem of an evergreen tree. The tree's life cycle is illustrated by the variety of plants and animals it supports

https://www.goodreads.com/en/book/show/1515367.Where_Would_I_Be_in_an_Evergreen_Tree



The Little Crooked Christmas Tree

By: Michael Cutting

During a storm on a Christmas tree farm, a dove and her family asks a small tree for protection, which the tree gives straightaway. The shelter it created for the doves bent the trunk and causes it to grow crooked. Now, no one wants the small imperfect tree. The tree's sacrifice to the dove is rewarded when it is replanted and decorated as a living Christmas tree in a garden.



https://www.goodreads.com/book/show/1369502.The_Little_Crooked_Christmas_Tree?from_search=true

Additional Resources:

Experiment: How pinecones were used to predict the weather <https://thehappyscientist.com/content/pine-cone-weather>

Fairy tale: Why evergreens keep their green all year <https://etc.usf.edu/lit2go/68/fairy-tales-and-other-traditional-stories/5109/why-the-evergreen-trees-keep-their-leaves-in-winter/>

The Legend of the Tamarak by Dennis Purschke <http://easternwoodlandmetisnation.ca/tamarak.htm>

The Jack Pine by Tom Thompson [The Jack Pine 1.jpg](#)



Snowy Alpine Resist Painting

<https://rhythmsplay.com/alpine-tree-watercolor-resist-art/>



Online tree leaf key <https://www.thoughtco.com/north-american-coniferous-trees-with-needles-1343481>

Simple Keys for Identifying Conifers: The Pine Family <https://www.playfullearning.net/resource/simple-keys-identifying-conifers-pine-family/>



Here, There and Under, Where?

Primary – Winter

"Animals are God's creatures. He surrounds them with his providential care. By their mere existence they bless Him and give Him glory. Thus men owe them kindness."

The Catechism of the Catholic Church

<https://www.ncronline.org/blogs/eco-catholic/st-francis-alliance-proclaims-protection-all-gods-creatures>



Catholic Graduate Expectation(s) in Action:

I believe that God is an awesome God

I co-operate with others in all that I do

I value everyone's work

I respect and listen to others

I follow rules of fair play

I work hard in school so that I can build my community and make it a better place

Faith Connections:

Where Do the Animals of the Earth Come From?

Share the portion of the Creation Story which explains the creation of animals with the students after discussing with them where they think that the animals of the earth came from (for the full version of the story, see: <https://www.biblegateway.com/passage/?search=Genesis+1&version=NRSV>)

And God said, "Let the waters bring forth swarms of living creatures, and let birds fly above the earth across the dome of the sky." So God created the great sea monsters and every living creature that moves, of every kind, with which the waters swarm, and every winged bird of every kind. And God saw that it was good. God blessed them, saying, "Be fruitful and multiply and fill the waters in the seas, and let birds multiply on the earth." And there was evening and there was morning, the fifth day.

And God said, "Let the earth bring forth living creatures of every kind: cattle and creeping things and wild animals of the earth of every kind." And it was so. God made the wild animals of the earth of every kind, and the cattle of every kind, and everything that creeps upon the ground of every kind. And God saw that it was good.

- What birds are you familiar with? What makes birds different from other kinds of animals?
- What kinds of creatures live in the water? What makes water creatures like fish different from creatures that live on land?
- What is the difference between a domestic animal and a wild animal? What examples of each are you familiar with?



Then God said, “Let us make humankind in our image, according to our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals of the earth, and over every creeping thing that creeps upon the earth.”

- What did God mean when he said that humans will be in charge of the fish, the birds, and all the wild animals, that humans will have power over them?
- In what ways are animals important to humans?
- In what ways can humans have power over animals however still acts as stewards of the earth’s creatures?

Additional Scripture Passages and Faith-Based Texts:

Psalm 127:2

It is in vain that you rise up early and go late to rest, eating the bread of anxious toil; for he gives sleep to his beloved.

Psalm 4:8

I will both lie down and sleep in peace; for you alone, O Lord, make me lie down in safety.

James 1:2-3

My brothers and sisters, whenever you face trials of any kind, consider it nothing but joy, because you know that the testing of your faith produces endurance;

Ecclesiastes 3:1

For everything there is a season, and a time for every matter under heaven:

Job 12: 7-10

But ask the animals, and they will teach you;
the birds of the air, and they will tell you;
ask the plants of the earth, and they will teach you;
and the fish of the sea will declare to you.
Who among all these does not know
that the hand of the Lord has done this?
In his hand is the life of every living thing
and the breath of every human being.

Prayer of Saint Francis of Assisi

Lord, make me an instrument of Your peace. Where there is hatred, let me sow love; where there is injury, pardon; where there is doubt, faith; where there is despair, hope; where there is darkness, light; where there is sadness, joy.

O, Divine Master, grant that I may not so much seek to be consoled as to console; to be understood as to understand; to be loved as to love; For it is in giving that we receive; it is in pardoning that we are pardoned; it is in dying that we are born again to eternal life.

<https://www.catholic.org/prayers/prayer.php?p=134>



Principles of Indigenous Learning:

- Awareness of History
- Relationships/Collaboration
- Community Involvement
- Story-telling/The Power of Story

Envision (Minds On)

Think about the ways that we as human beings adapt to the snow, ice, and cold temperatures of the winter season. Create a chart of the students' thinking.

Sow (Action)

Like human beings, animals adapt in many ways in order to survive the winter. Some animals undergo physical changes to suit the cold, others migrate to warmer locations, and some animals enter hibernation. Discuss some of the following animals from the eastern Ontario area: wood frogs, deer mice, brown bats, white-tailed deer, snowshoe hare, beaver, barred owl, chickadees, monarch butterflies, bumblebees, black bears, skunks, red foxes. Predict what adaptation strategy/strategies each of the animals use to survive the cold months. Do some investigation to find out if what you predicted about the animals surviving the winter is true. Create a media presentation (e.g. Power Point) or publish a classroom text (e.g. a lift-and-see book similar to *Over and Under or Secrets of Winter* – see Resource section below) to present your findings!

Nurture (Consolidation)

Now that you've done some research, distinguish the ways that humans and animals are similar to and different from each other when considering ways to adapt to winter weather. Create and label a Venn diagram to present your conclusions.

Additional Ideas for Applying and Extending Learning:

- Take a winter walk and observe and discuss evidence of some of the animals on your list that remain in your area or hibernate during winter. What evidence can you find?
- Create a dictionary of terms, a BINGO game, or a crossword puzzle to help you learn about words related to winter adaptation (e.g. camouflage, hibernation, migration, etc.)
- Examine the different legs and feet of the animals that stay here in the winter. Focus on the White-tailed deer and Snowshoe Hare and discuss how their adaptations suit these animals. Have 'snowshoe versus no snowshoe' races. Which team would you rather be on? Try this game in shallow and deep snow periods and discuss the differences noticed by the students!
- Try an experiment demonstrating how blubber or fat is useful as insulation: *SciShow Kids – Fun with Blubber* <https://www.youtube.com/watch?v=DQGAcqhKGs>.
- Write a story/ print a speech bubble of what one animal studied would say to you about their adaptation strategies used for the surviving the winter months.



- Access a community partner who can share with you the animal medicine teachings of some of our native animals studied throughout the lesson (e.g. the white-tailed deer, the bear, the turkey, the goose).

Curriculum Connections

Kindergarten

Religion

- BL1:** demonstrates an awareness of God as Creator of all things through their everyday interactions, explorations with nature and in Sacred Scripture
- LC3:** understand that friendship is fundamental to forming the larger Christian community;
- LC4:** develop and experience faith within a community of believers
- LS2:** demonstrate the wonder and awe in the beauty and care of God's creation;
- LS4:** recognize that God is present in all people and all situations

Four Frames

- OE1:** communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts
- OE6:** demonstrate an awareness of their own health and well-being
- OE7:** participate actively and regularly in a variety of activities that require the application of movement concepts
- OE10:** demonstrate literacy behaviours that enable beginning writers to communicate with others
- OE11:** demonstrate an understanding and critical awareness of a variety of written materials that are read by and with their educators
- OE14:** demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings
- OE22:** communicate their thoughts and feelings, and their theories and ideas, through various art forms

Grades 1-3

Religion

Celebrating

- Find hope and faith in the story of salvation that unfolds through the celebrations of the five seasons of the Church's liturgical year

Living a Moral Life

- Desire to know what it means to live as a disciple of Jesus and a child of God;
- Strive to live according to the moral examples Jesus provided through his words and actions;

Living in Solidarity

- Appreciate all of creation as gift and actively fulfill their responsibility to be stewards of God's creation;
- Acknowledge all life as sacred.



Living in Communion

- Reflect on the example of the Saints as models for their own lives;
- Appreciate the communal nature of human persons and the communal nature of the Church: communion with God and all of God's creation

Family Life

Grade 1

Living in the World -- Exploring Human Nature

OE2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Grade 2

Living in the World -- Appreciating God's Goodness

OE1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

The Arts

Visual Arts

D1: *Creating and Presenting:* apply the creative process (see pages 19–22) to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;

Science

Grade 1

Understanding Life Systems -- Needs and Characteristics of Living Things

OE2. investigate needs and characteristics of plants and animals, including humans;

OE3. demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.

Understanding Earth and Space Systems – Daily and Seasonal Changes

OE1. assess the impact of daily and seasonal changes on living things, including humans;

OE2. investigate daily and seasonal changes;

OE3. demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things

Grade 2

Understanding Life Systems -- Growth and Changes in Animals

OE1. assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and the places where they live;

OE2. investigate similarities and differences in the characteristics of various animals;

OE3. demonstrate an understanding that animals grow and change and have distinct characteristics.

Language

Grade 1-3

Oral Communication

1. listen in order to understand and respond appropriately in a variety of situations for a variety of purposes;



2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

Reading

1. read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning

Writing

1. generate, gather, and organize ideas and information to write for an intended purpose and audience;

Physical Education

Grade 1 –3

Active Living

A1: participate actively and regularly in a wide variety of physical activities and identify how regular physical activity can be incorporated into their daily lives;

Movement Competence: Skills, Concepts, and Strategies

B1: perform movement skills, demonstrating awareness of the basic requirements of the skills and applying movement concepts as appropriate, as they engage in a variety of physical activities;

Grade 1 -- Healthy Living -- Making Connections for Healthy Living

C3: demonstrate the ability to make connections that relate to health and well-being – how their choices and behaviours affect both themselves and others, and how factors in the world around them affect their own and others' health and well-being

Mentor Text Connections

Bear Snores On

By: Karma Wilson, Jane Chapman (Illustrator)

One by one, a whole host of different animals and birds find their way out of the cold and into Bear's cave to warm up. But even after the tea has been brewed and the corn has been popped, Bear just snores on! See what happens when he finally wakes up and finds his cave full of uninvited guests -- all of them having a party without him!

https://www.goodreads.com/book/show/867248.Bear_Snores_On

Make a note of the animals in the story and where they fall in the chart on Animals in the Winter.



Over and Under The Snow

By: Kate Messner, Christopher Silas Neal (Illustrator)

Over the snow, the world is hushed and white. But under the snow is a secret world of squirrels and snowshoe hares, bears and bullfrogs, and many other animals who live through the winter, safe and warm. This book takes readers on a cross country ski trip through the winter woods to discover the secret world of animals living under the snow.

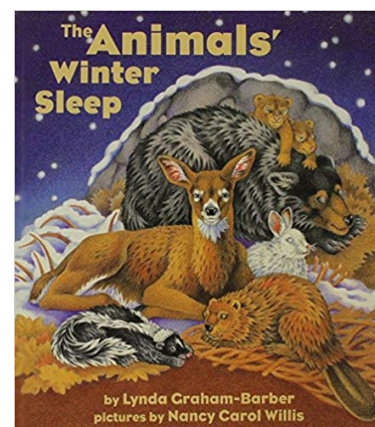
<https://www.goodreads.com/book/show/10950055-over-and-under-the-snow>



The Animals Winter Sleep

By: Lynda Graham-Barber, Nancy Carol Willis (Illustrator)

Taking nonfiction into the realm of bedtime read-to-me stories, this rich, melodic text paired with detailed color pencil illustrations describes how 13 North American animal species—such as black bear, ermine, pileated woodpecker, porcupine, river otter, and ruffed grouse—survive harsh winter snows snug inside their dens, nests, burrows, and lodges. Additional information, geared to very young children, includes animal winter survival adaptations, such as the foods they eat, nesting materials, camouflage, and predator survival along with a series of questions that encourage children to look back at the illustrations for clues. A line art diagram of the final panorama illustration that identifies the location of all 13 animal species is also included.



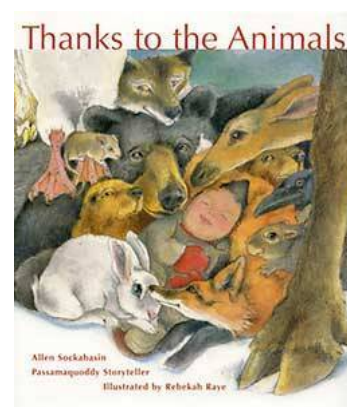
<https://www.amazon.com/Animals-Winter-Sleep-Lynda-Graham-Barber/dp/0966276167?tag=mrsjoncresta-20>

Thanks to the Animals

By: Allen Sockabasin

Thanks to the Animals celebrates 10 years in print with a new expanded edition! Little Zoo Sap and his family are moving from their summer home on the coast to the deep woods for the winter, traveling on a big bobsled pulled by big horses through the snow. When Zoo Sap falls off of the sled unnoticed, the forest animals hear his cries. First to come are the beaver, who put their tails together to cradle him. Then all the other animals circle round everyone from the tiny mouse to the giant moose to the great bald eagle keeping him warm and safe until his father comes back to find him. This is the audio version of the story being told by the author in the Passamaquoddy language.

<https://kidworldcitizen.org/5-childrens-stories-with-american-indians/>



Winter Animals in Canada

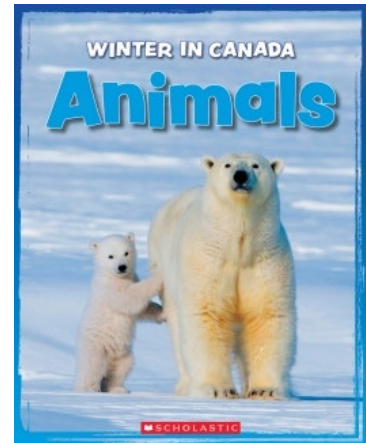
By Cynthia O'Brien

Canadian animals are adorable and adaptable — here's how they survive our extremely weird winters!

Grizzly bears sleep it away, while polar bears are in their element. Arctic hares and foxes change their looks to winter white, and cardinals and Atlantic puffins are dazzling splashes of colour against the snow. The Peary caribou toughs it out in the tundra, but the boreal forest Caribou hangs out in the forest where the wood frog freezes solid and waits it out until spring.

Amazing photographs and simple text highlight the amazing ways Canadian animals have adapted to survive!

<http://www.scholastic.ca/books/view/winter-in-canada-animals>



Additional Resources

SciShow Kids – Animals With Winter Coats (4:29)

Have you ever wondered how animals stay warm in the winter? Learn all about their natural cozy coats and the other awesome tricks they use to make it through the cold conditions!

<https://www.youtube.com/watch?v=ON7FGPeykFE>



Getting Ready for Hibernation! (3:36)

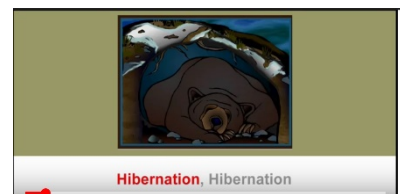
There's a chill in the air where Jessi and Squeaks live, and that means it's time for some animals to start the long, yearly nap called hibernation! Learn why animals hibernate and how they get ready to sleep for months at a time!

<https://www.youtube.com/watch?v=OhrhcsICrE8>



Wild Kratts – Exploring Extreme Animal Habitats (15:39), (from 7min to the end)

<https://www.youtube.com/watch?v=lgq2JhijSew>



Nature-Based Games (Cache game)

Twin Eagles Wilderness School

<http://www.twineagles.org/fun-outdoor-games.html>

Hibernation Song

By: David Burba

<https://www.youtube.com/watch?v=BstmnCYwAE8>

Secrets of Winter

By: Carron Brown

Who is out and about during wintertime? Shine a light behind the pages and discover a natural winter world full of surprises!

<https://www.goodreads.com/book/show/28149050-secrets-of-winter>



Why Plant Flowers?

BeeCause...

Primary – Spring

‘Unique among all God’s creatures, only the honeybee improves the environment and preys not on any other species.’

(Royden Brown)



<https://www.beesuniverse.com/index.php>

Catholic Graduate Expectation(s) in Action:

I care about and respect God’s creation and everything in it

I stand up for what is right

I know that all life is precious

I respect and protect the world and all that is in it

Because I accept my responsibilities, I can make a difference, and will live my life like Jesus.

Faith Connections:

A Bee’s Journey – A Testament of Faith

Bees are one of God’s most interesting creatures. They are very social and cooperative insects which live in large groups called colonies. A colony can have up to between 50 000 – 80 000 bees! Bee colonies live in hives. Within the hive, bees split the responsibilities of the family with different bees having different jobs so that the hive runs smoothly. Worker bees collect food (pollen and nectar from flowers) to keep the hive strong and healthy. Worker bees also construct the hive, keep it clean, and protect it. Drone bees are male bees and they mate with the queen bee. The queen bee’s job is to lay eggs so that new bees are born to take the place of bees who die. The queen bee lays hundreds of eggs. The queen bee and the drones rely heavily on the worker bees since they are the only bees to leave the hive during the working season. Worker bees fly a great distance to fulfill their responsibilities to the colony: they might fly up to 6 km away from the hive and as high as 13 km to collect nectar and pollen. In all, a worker bee might travel a distance equal to more than once around the world in order to fulfill their responsibilities to the group! (Sources:

<https://www.buzzaboutbees.net/how-far-do-bees-fly.html>, <https://honeycouncil.ca/bee-facts/>,
<https://kids.nationalgeographic.com/animals/invertebrates/insects/honeybee/>,
<https://www.kidsplayandcreate.com/honeybee-facts-for-kids/>)

The life of a bee reminds us of our journey as Catholics during the Lenten season. The Lenten season occurs during the 40 days before Easter. For Catholics, the Lenten season is an opportunity for us to remember the time in Jesus’ life when he went into the desert for 40 days and he fasted and prayed, showing his faith and love for God the Father. While in the desert, the Devil tried to tempt Jesus into losing faith and denouncing



God; but Jesus did not let the devil win. He continued to stick to his fast and time of prayer for the full 40 days. (Bible references: Matthew 4:1-11, Mark 1:11-13, Luke 4:1-13)

During Lent, we as Catholics are encouraged to give up something that we love or to take on an extra responsibility or action that might be a bit difficult for us, modeling the sacrifice Jesus made while he was in the desert. Lent is also a time for prayers of reflection, taking time to think about our faith and love for God, as Jesus did when he went away. Finally, Lent is also a time for us to prepare for Easter, the joyful time marking Jesus' resurrection from the dead, reminding us that there is life after death.

- Discuss why it would be a test of faith and endurance to live the life of a bee and how that relates to the Lenten season.
- What things would be good things to give up at Lent, modeling the fast that Jesus went through during his 40 days in the desert?
- What actions or responsibilities might we take on during Lent, challenging ourselves with a test of commitment and endurance?
 - Write out lists of what will be given up and what will be taken on by the students during Lent and post the lists in the classroom as a daily reminder of the commitment they are making for the Lenten season. Create a prayer together, asking Jesus to help you fulfill the commitment that is being taken on and recite it each day as a class.
 - Write out simple actions of kindness on small slips of paper and place them in a bowl or jar. For each of the 40 days of Lent, choose one slip from the container and complete the act of kindness as individual students or as a class. At the end of the day, if the action has been completed, place a token onto your prayer table (e.g. a pebble, a gemstone, a bee cut-out). At the end of the Lenten season, celebrate all of the tokens that have been collected, just as we celebrate Jesus resurrection!

For a kid-friendly video version of the story of Jesus' temptation in the desert, see:

<https://www.youtube.com/watch?v=K01s7VxuDqo>

Additional Scripture Passages and Faith-Based Texts:

Numbers 13:27

And they told him, "We came to the land to which you sent us; it flows with milk and honey, and this is its fruit.

Psalms 19:10

More to be desired are they than gold, even much fine gold; sweeter also than honey, and drippings of the honeycomb.

Deuteronomy 8:8

A land of wheat, and barley, and vines, and fig trees, and pomegranates; a land of oil olive, and honey

Proverbs 16:24

Pleasant words are like a honeycomb, sweetness to the soul and health to the body.



Principles of Indigenous Learning:

- Place-Based/Local Focus
- Engaging with the Land, Nature, and the Outdoors
- Experiential Learning
- Storytelling/The Power of Story

Envision (Minds On)

Find out what the students know about bees and how do they feel about bees?

Explain to the students that in the spring, the season of renewal and new life, bees are the first important pollinators to emerge, feeding first on the important dandelions before moving onto other spring flowers.

Watch the following video of bees at work: <https://www.youtube.com/watch?v=ta154f5Rp5Y> or <http://www.sciencekids.co.nz/videos/animals/bees.html> or <https://www.youtube.com/watch?v=B2jfMHWYTDk>

Discuss with the students why the habits of bees are so important. Together, hypothesize ways that we might help pollinators in our own backyard stay strong and continue their crucial role in our food supply? Come up with ideas to create new life for bees around our neighborhood.

Sow (Action)

- If you can, find a bee to observe. Notice it's behaviour. What kinds of plants does the bee tend to land on? When the bee lands on a flower, what does it do?
- Take a walk around your school or the local community and observe areas that are bee friendly (which have the kinds of flowers you've observed bees landing on). Do you feel there are sufficient areas where bee-friendly flowers are planted to attract bees? Make note of areas that would benefit from additions of pollinator-friendly flowers such as echinacea, bee balm, and sunflowers.

Nurture (Consolidation)

Researching bees:

- 1) Bees live in hives. Investigate the social system/community of a hive. How do all the bees in a hive work together to make a successful community? Create a poster to explain how a hive is organized and to explain the different jobs of the bees in a bee community.
- 2) Worker bees leave the hive in order to collect pollen and nectar for the hive. What kinds of flowers do worker bees look for in order to gather honey? Are some flowers better for collecting pollen than others? Find out about what type of plants bees rely on for pollination (like echinacea, bee balm, and sunflowers). Plan to create a small pollination garden for bees to visit by starting some bee-friendly flowers from seed in the classroom and then transferring the flowers outside to a designated area. In addition to planting a pollinator garden, the class can build "pollinator houses" that can be hung



around the school or around the school community. Have fun visiting these homes to make note if any new dwellers that may have moved in (<https://m.youtube.com/watch?v=TklME77Ow-A>).

- 3) Nectar is collected from hives to make honey and other products that we use in our daily life. Find out about the products that come from bees, including honey, honeycombs, and beeswax. Share with students that beekeepers must be careful to always leave enough honey to help bees survive the winter.

Additional Ideas for Applying or Extending Learning:

- There are many kinds of bees. Compare and contrast the different species of bees. Research mason bees and compare/contrast them to other species of bees such as the honeybee and bumblebee. Choose one type of bee to give a presentation about or present information in chart form!
- There are many professions associated with bees—beekeeper, apiary technician, cosmetic scientist, retail honey salesperson. If possible, invite a guest associated with bees into the classroom (in person or via Skype) to discuss their relationship with bees.
- Bees dance to communicate information. Create a dance that communicates a specific goal.
- Create paper sculptures for the outdoors that have seeds embedded in the paper following the inspiration works of Henry Matisse (Henry Matisse for kids – Art with Mati and Dada -- <https://www.youtube.com/watch?v=s37OoBXkYAc>)
- and Canadian artist Brooke Marrisett (An environmental paper sculptor -- <http://www.concordia.ca/news/stories/2019/05/31/concordia-fine-arts-student-builds-ecological-sculptures-out-of-bee-paper.html>).

Curriculum Connections

Kindergarten

Religion

BL OE 1: demonstrate an awareness of God as Creator of all things through their everyday interactions, explorations with nature, and in stories including Sacred Scripture

LS OE 2: demonstrate the wonder and awe in the beauty and care of God’s creation;

LS OE 4: recognize that God is present in all people and all situation

Four Frames

OE12: demonstrate understanding and critical awareness of media texts

OE13: use the processes and skills of an inquiry stance (i.e., questioning, planning, predicting, observing, and communicating)

OE14: demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representation of their findings

OE19: collect, organize, display, and interpret data to solve problems and to communicate information

OE21: express their responses to a variety of forms of drama, dance, music, and visual arts from various cultures and communities

OE22: communicate their thoughts and feelings, and their theories and ideas, through various art forms



OE29: demonstrate an understanding of the natural world and the need to care for and respect the environment

OE31: demonstrate knowledge and skills gained through exposure to and engagement in drama, dance, music, and visual arts

Grades 1-3

Religion

Grade 1-3

Living in Solidarity

- Appreciate all of creation as gift and actively fulfill their responsibility to be stewards of God's creation;
- Acknowledge all life as sacred.

Family Life

Grade 1

Living in the World -- Appreciating God's Goodness:

E1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

Exploring Human Nature:

E2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Grade 2

Living in the World -- Appreciating God's Goodness:

E1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

Exploring Human Nature:

E2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Reflecting, Responding, and Analyzing:

E3: apply an understanding of the global dimension of human nature in personally relevant contexts.

Grade 3

Growing in Commitment -- Reflecting, Responding, and Analyzing

D3: apply an understanding of the role of commitment in human relationships in personally relevant contexts

Arts

Grade 1-3

Dance

A1. Creating and Presenting: apply the creative process to the composition of simple dance phrases, using the elements of dance to communicate feelings and ideas;

Visual Arts

D1. Creating and Presenting: apply the creative process (see pages 19–22) to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;



D2. *Reflecting, Responding, and Analyzing:* apply the critical analysis process (see pages 23–28) to communicate feelings, ideas, and understandings in response to a variety of art works and art experiences;

D3. *Exploring Forms and Cultural Contexts:* demonstrate an understanding of a variety of art forms, styles, and techniques from the past and present, and their social and/or community contexts.

Science

Grade 1

Understanding Life Systems - Needs and Characteristics of Living Things

OE1. assess the role of humans in maintaining a healthy environment;

OE2. investigate needs and characteristics of plants and animals, including humans;

OE3. demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.

Grade 2

Understanding Life Systems - Growth and Changes in Animals

OE1. assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and the places where they live;

OE2. investigate similarities and differences in the characteristics of various animals;

OE3. demonstrate an understanding that animals grow and change and have distinct characteristics.

Language

Grade 1-3

Writing

OE1. generate, gather, and organize ideas and information to write for an intended purpose and audience;

OE2. draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;

Media Literacy

OE1. create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;

Social Studies

Grade 1

B2. *Inquiry:* use the social studies inquiry process to investigate some aspects of the interrelationship between people and different natural and built features of their local community, with a focus on significant short- and long-term effects of this interrelationship (FOCUS ON: *Cause and Consequence*)

Grade 3 -

B2. *Inquiry:* use the social studies inquiry process to investigate some of the environmental effects of different types of land and/or resource use in two or more Ontario municipal regions, as well as some of the measures taken to reduce the negative impact of that use (FOCUS ON: *Cause and Consequence; Perspective*)

B3. *Understanding Context:* describe major landform regions and types of land use in Ontario and some of the ways in which land use in various Ontario municipalities addresses human needs and wants, including the need for jobs (FOCUS ON: *Significance*)



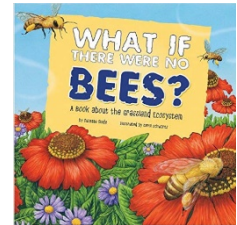
Mentor Text Connections

What If There Were No Bees?

By: Suzanne Slade

Grassland ecosystems can be found on nearly every continent. Countless animals and plants live in them. So, what difference could the loss of one animal species make? Follow the chain reaction and discover how important honeybees are.

https://www.amazon.ca/What-There-Were-Bees-Grassland/dp/140486394X/ref=asc_df_140486394X/?tag=googleshopc0c-20&linkCode=df0&hvadid=296022056369&hvpos=1o1&hvnetw=g&hvrnd=12442984063400358670&hvpon e=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9000710&hvtargid=pla-563852079789&psc=1

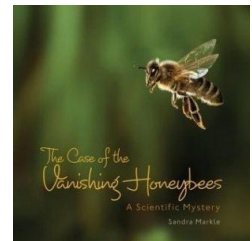


The Case of the Vanishing Honeybees: A Scientific Mystery

By: Sandra Markle

This book is a great resource for older children who wish to know more about the causes of CCD. Illustrated primarily by close-up photographs of bees and their hives, this bee book provides an in-depth look at mites, pesticides, and illnesses that hurt bees. Markle explains the traveling bees who pollinate almonds, peaches, and other crops year-round, and suggests that overwork may be another detriment to the health of the beehives. As the title suggests, this bee book handles bees and the problem of CCD in a scientific manner and would be an excellent resource for classes or for children who need a resource for an individual project or paper.

<https://thehoneybeeconservancy.org/2015/11/07/5-bee-books-for-children/>

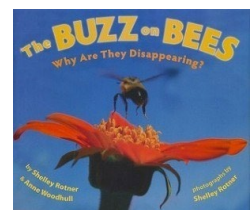


The Buzz in Bees: Why Are They Disappearing?

By: Shelley Rotner

This book is illustrated with photographs and follows professional beekeeper Dave Hackenberg through his experiences with CCD – which began in 2006. Rotner covers the rapid decline in honeybee numbers, why bees are needed, and provides photographic examples of the many foods we eat that would suffer without bees. In addition, she explains how bees pollinate the cotton we make our clothing out of and provide food for grazing animals. Different kinds of bees, possible causes of CCD, and tips on what families can do to help bees are all included as well.

<https://thehoneybeeconservancy.org/2015/11/07/5-bee-books-for-children/>



Additional Resources:

Resource articles and lists

Mason Bees - <https://thehoneybeeconservancy.org/why-bees/mason-bees/>



Pollinator health - <https://www.ontario.ca/page/pollinator-health#section-4>

How to Plant a Pollinator Garden - <https://davidsuzuki.org/queen-of-green/create-pollinator-friendly-garden-birds-bees-butterflies/>

Videos

Magic School Bus In A Beehive (Honeybees)-- <https://www.dailymotion.com/video/x5viuyI>

Daniel Cook – Learning About Beekeeping -- <https://www.youtube.com/watch?v=gMQnqY6yyvM>



Making a Difference – Taking Care of our Water

Primary – Spring

“We cannot allow our seas and oceans to be littered by endless fields of floating plastic. We need to pray as if everything depended on God’s providence and work as if everything depended on us.”
Pope Francis

<https://www.vaticannews.va/en/pope/news/2018-09/pope-francis-care-for-water-is-urgent-imperative.html>



Catholic Graduate Expectation(s) in Action:

I care about and respect God’s creation and everything in it!
I speak, write and listen as Jesus would want me to
I care about others and speak up for them
I have thoughts and opinions that matter
I make good choices
I have hope for the future
I solve problems with knowledge, understanding, and prayer

Faith Connections:

Water and the Catholic Faith

Water is the Christian symbol of divine life as well as a sign of purity and cleansing from sin. The outward sign of baptism is the actual pouring of the water on the head while reciting the words, "I baptize thee in the name of the Father, the Son, and the Holy Spirit." The cleansing quality of water is considered something that can purify a person from the outside. The holy water signifies that life is given to us by God and is a symbol of His grace. Water also recalls the gospel, "Jesus answered, "Very truly, I tell you, no one can enter the kingdom of God without being born of water and Spirit."

(<https://baby.lovetoknow.com/baptism/baptism-symbols>).

But what is sin and how do we explain it to young children? Sin is a thought or action that goes against the word of God or the way God would want us to act. It is anything we think, say, or do that would make God feel unhappy. (See Rom. 3:23; James 4:17; 1 John 3:4 for bible passages explaining the idea of sin)

Discuss with the students the idea of sin and make a list of ideas that the students identify as examples of sin. Talk about what Jesus would do in the situations where some of the students’ ideas might occur. Make the idea of “What would Jesus do?” a part of the classroom community culture by using it as a way of analyzing and problem-solving conflicts between classmates as they arise in the classroom or in the schoolyard.



Additionally, use the question “What would Jesus do?” as the guideline for taking action against water and other types of environmental pollution!

Additional Scripture Passages and Faith-Based Texts:

Genesis 1: 9-11

And God said, “Let the waters under the sky be gathered together into one place, and let the dry land appear.” And it was so. God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good. Then God said, “Let the earth put forth vegetation: plants yielding seed, and fruit trees of every kind on earth that bear fruit with the seed in it.” And it was so.

Genesis 1: 20-23

And God said, “Let the waters bring forth swarms of living creatures, and let birds fly above the earth across the dome of the sky.” So God created the great sea monsters and every living creature that moves, of every kind, with which the waters swarm, and every winged bird of every kind. And God saw that it was good. God blessed them, saying, “Be fruitful and multiply and fill the waters in the seas, and let birds multiply on the earth.” And there was evening and there was morning, the fifth day.

Ezekiel 36:25

I will sprinkle clean water upon you, and you shall be clean from all your uncleannesses, and from all your idols I will cleanse you.

Serenity prayer

God grant me the serenity
to accept the things I cannot change;
courage to change the things I can;
and wisdom to know the difference.

Principles of Indigenous Learning:

- Place-Based/Local Focus
- Awareness of History
- Storytelling/The Power of Story
- Relationships/Collaboration

Envision (Minds On)

Read *The Water Walker* by Joanne Robertson to the students.

Before reading, discuss with the students the front cover of the book:

- Who is on the cover and what do you think she is doing?
- What do you think it means, to be a water walker?



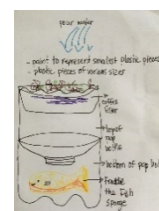
During reading, discuss with the students the ways in which the water (Nibi) is mistreated (as shown by the graphics and illustrations in the text). What are the students' reactions to the way that water is treated?

After reading, discuss with students:

- Why is Nakomis, the Water Walker's work so important?
- What does Nakomis' statement "without water, there is no life" mean?
- How will students respond to Nakomis' call to action (What are you going to do about it)?

Sow (Action)

- Conduct an experiment about how plastics are affecting water and water habitats. Gather various bits of plastics from around your classroom or school, making sure they are of different sizes. Using these plastic items conduct the following experiment to create a visual awareness of how small particles of plastic from one location can pollute water and animals in another location (*Freddie the Fish* experiment –



http://www.texasstateofwater.org/screening/pdf_docs/FreddieTheFish.pdf

- Notice how the fine plastic particles (the paint) are absorbed into 'Freddie the Fish'.
- What are the key learnings of the experiment? Discuss together!
- How will students share with others about the information learned?

Nurture (Consolidation)

Healing our Water:

Find a local body of water near your school or in/close to your community (a creek, river, pond, or shoreline) that you and your students can claim and watch over.

- What issues pose a threat to the body of water you have claimed to protect and what are the implications of the issues?
- Identify reasons why this body of water is important to keep clean and healthy. What living things around it depend on the body of water and why? In what other ways might the water be used and how might pollution impact these uses?

Model Nakomis, the Water Walker's work of healing the water by ensuring that it is cleaned and monitored for pollution and mistreatment.

- How will you help your water to become healthy again/remains healthy?

Learn about the Water Song and sing it to your body of water every time you visit it!

(<https://www.resilience.org/stories/2016-12-12/water-song-indigenous-women-and-water/>)



Additional Ideas for Applying and Extending Learning:

- Read about Autumn Peltier, an Anishinaabe girl from Wikwemikong First Nation, who spoke at the United Nations about the need to protect our water and who was nominated for the 2017 International Children's Peace Prize.
- Do an audit of plastic garbage found in and around your school. Create a graph presenting the plastic garbage you generate the most of. As a class, organize and implement an education and reduction/elimination initiative for your school (e.g. no more plastic spoons in the school).
- Study a local/global water animal and the impact water pollution has on it.
- Investigate Monet's *Waterlilies*. Find a body of water (e.g. puddle, pond, stream, creek, lake, pond, shoreline) that you can observe. Use water-colours or tempera paint to paint the water scene you see. ([https://en.wikipedia.org/wiki/Water_Lilies_\(Monet_series\)](https://en.wikipedia.org/wiki/Water_Lilies_(Monet_series)))
- Create a Haiku, Word Cloud or Concrete poem to write about water. Have half of your students write about the beauty and sacredness of water and have the other half of your students write about the ugliness of water pollution and the mistreatment of water. Use the students' poems as a way to celebrate World Water Day (March 22nd)
- Go outside and look at the puddles and trickles of running water around the school or school community (sidewalk curbs, hills, small creeks...). Place a stick or leaf at one end of the flow of water and watch how the water carries the stick or leaf. Observe how the stick or leaf moves or gets stuck. Back inside watch *A Whale's Tale* (3 minutes) <https://www.youtube.com/watch?v=xFPoIU5iiYQ> or *All the Way to the Ocean* (14 minutes) <https://www.youtube.com/watch?v=sZW2ByM623g> and discuss students' learning and questions.



Curriculum Connections

Kindergarten:

Religion:

ML4: demonstrate signs of respect and well-being for self and others.

LC1: develop a growing sense of belonging to a family, a faith, and a community;

LC2: develop an awareness that within every group to which we belong there are roles and responsibilities;

LS 2: demonstrate the wonder and awe in the beauty and care of God's creation;

LS3: recognize and respond to the care of those who are in need, or who are marginalized;

LS4: recognize that God is present in all people and all situations

Four Frames

OE5: demonstrate an understanding of the diversity among individuals and families and within schools and the wider community

OE6: demonstrate an awareness of their own health and well-being

OE9: demonstrate literacy behaviours that enable beginning readers to make sense of a variety of texts



OE14: demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representation of their findings

OE15: demonstrate an understanding of numbers, using concrete materials to explore and investigate counting, quantity, and number relationships

OE19: collect, organize, display, and interpret data to solve problems and to communicate information

OE22: communicate their thoughts and feelings, and their theories and ideas, through various art forms

OE23: use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts

OE28: demonstrate an awareness of their surroundings

OE29: demonstrate an understanding of the natural world and the need to care for and respect the environment

Grade 1-3

Religion

Living in Communion

Appreciate the communal nature of human persons and the communal nature of the Church communion with God and all of God's creation

Living in Solidarity

Appreciate all of creation as gift and actively fulfill their responsibility to be stewards of God's creation; Acknowledge all life as sacred

Family Life

Grade 1

Living in the World -- Appreciating God's Goodness:

E1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

Exploring Human Nature:

E2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Grade 2

Living in the World -- Appreciating God's Goodness:

E1: appreciate that humans are called to image the love of God by caring for all of God's gifts of creation.

Exploring Human Nature:

E2: demonstrate an understanding of the ways in which humans participate in society and fulfill the responsibility to care for and build God's world.

Reflecting, Responding, and Analyzing:

E3: apply an understanding of the global dimension of human nature in personally relevant contexts.

Grade 3

Growing in Commitment -- Reflecting, Responding, and Analyzing

D3: apply an understanding of the role of commitment in human relationships in personally relevant contexts



The Arts

Grade 1-3

Visual Arts

OED1: Creating and Presenting: apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;

OED2: Reflecting, Responding, and Analyzing: apply the critical analysis process to communicate feelings, ideas, and understandings in response to a variety of art works and art experiences;

Science

Grade 1

Understanding Life Systems -- Needs and Characteristics of Living Things

OE1: assess the role of humans in maintaining a healthy environment;

OE2: investigate needs and characteristics of plants and animals, including humans;

OE3: demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.

Grade 2

Understanding Life Systems - Growth and Changes in Animal

OE1: assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and the places where they live;

OE2: investigate similarities and differences in the characteristics of various animals;

Language (Grade 1-3)

Reading

OE2: recognize a variety of text forms, text features, and stylistic elements and demonstrate understanding of how they help communicate meaning

Writing

OE1: generate, gather, and organize ideas and information to write for an intended purpose and audience

Media and Literacy

OE1: demonstrate an understanding of a variety of media texts;

OE2: identify some media forms and explain how the conventions and techniques associated with them are used to create meaning;

OE3: create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;

OE4: reflect on and identify their strengths as media interpreters and creators, areas for improvement, and the strategies they found most helpful in understanding and creating media texts.

Math (Grade 1-3)

Data Management

OE1: collect and organize discrete primary data and display the data using charts and graphs (Grade 1: pictograph, Grade 2: bar graph, Grade 3: bar graphs)



OE2: read, describe, and interpret data presented in charts and graphs

Social Studies

Grade 1

Heritage and Identity: Our Changing Roles and Responsibilities

A1. Application: describe some of the ways in which people's roles, relationships, and responsibilities relate to who they are and what their situation is, and how and why changes in circumstances might affect people's roles, relationships, and responsibilities as well as their sense of self (Focus On: *Continuity and Change*)

A3. Understanding Context: demonstrate an understanding that they and other people have different roles, relationships, and responsibilities, and that all people should be treated with respect, regardless of their roles, relationships, and responsibilities (Focus On: Significance)

People and Environments: The Local Community

B1. Application: describe some aspects of the interrelationship between people and the natural and built features of their community, with a focus on how the features of and services in the community meet people's needs (Focus On: Interrelationships)

B2. Inquiry: use the social studies inquiry process to investigate some aspects of the interrelationship between people and different natural and built features of their local community, with a focus on significant short- and long-term effects of this interrelationship (Focus On: Cause and Consequence)

Grade 2

People and Environments: Global Communities

B1. Application: describe some similarities and differences in the ways in which people in two or more communities in different parts of the world meet their needs and have adapted to the location, climate, and physical features of their regions (Focus On: Cause and Consequence)

B2. Inquiry: use the social studies inquiry process to investigate aspects of the interrelationship between the natural environment, including the climate, of selected communities and the ways in which people in those communities live (Focus On: Interrelationships; Patterns and Trends)

B3. Understanding Context: identify and locate various physical features and selected communities around the world,

Grade 3

People and Environments: Living and Working in Ontario

B2. Inquiry: use the social studies inquiry process to investigate some of the environmental effects of different types of land and/or resource use in two or more Ontario municipal regions, as well as some of the measures taken to reduce the negative impact of that use (Focus On: *Cause and Consequence; Perspective*)

Physical Education

Grade 1 -- *Healthy Living -- Making Connections for Healthy Living*

C3: demonstrate the ability to make connections that relate to health and well-being – how their choices and behaviours affect both themselves and others, and how factors in the world around them affect their own and others' health and well-being



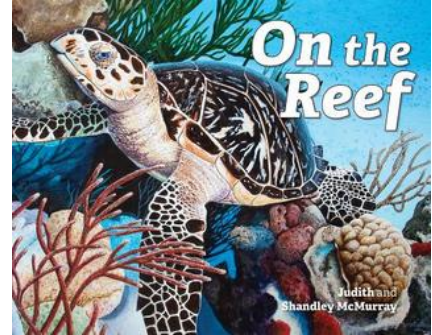
Mentor Text Connections

On the Reef

By: Judith and Shandley McMurray

This book brings to life the importance of maintaining a healthy ocean environment in a way that children can understand and appreciate. Two children find a Hawksbill turtle that has become entangled in some of the plastic that pollutes the world's oceans. Working to save the turtle the children discover that the beauty of nature is something to cherish and protect and preserving the fragile balance of life in the oceans is necessary.

<https://www.goodreads.com/en/book/show/29598784-on-the-reef>

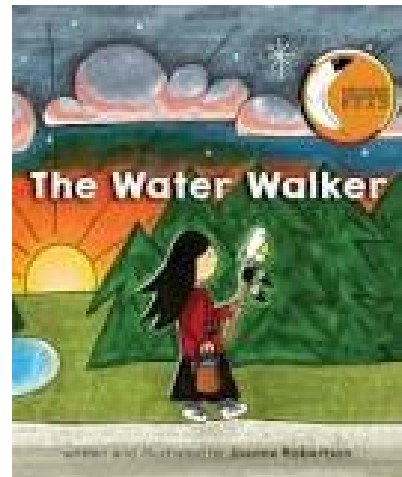


The Water Walker

By: Joanne Robertson

The story of a determined Ojibwe grandmother (Nokomis) Josephine Mandamin and her great love for Nibi (water). Nokomis walks to raise awareness of our need to protect Nibi for future generations, and for all life on the planet. She, along with other women, men and youth, have walked around all the Great Lakes from the four salt waters, or oceans, to Lake Superior. The walks are full of challenges, and by her example Josephine challenges us all to take up our responsibility to protect our water, the giver of life, and to protect our planet for all generations. (*From Second Story Press*)

<https://www.cbc.ca/books/the-water-walker-1.4693904>



The Water Hole

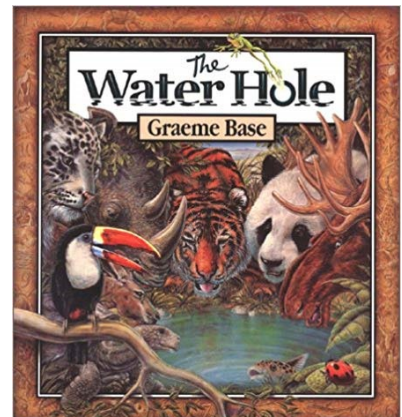
By: Graeme Base

Down to the secret waterhole the animals all come, As seasons bring forth drought and flood, they gather there as one. United in their common need, their numbers swell to ten, But hidden deep amongst the trees lie ten times that again!

https://books.google.ca/books/about/The_Waterhole.html?id=P-wZAAAACAAJ&source=kp_book_description&redir_esc=y

An interview with the author about the layers within the storybook

<https://www.youtube.com/watch?v=n6a2tttKlrU>



Additional Resources:

Great Art for Great Lakes

<https://greatnessglp.com/GAGL/communities/>

You Tube - The Starfish Story (adapted from the work of Loren Eiseley

<https://www.youtube.com/watch?v=Pkv0jvmBLOc>

The Water Princess

by Susan Verde, Georgie Badiel, Peter H. Reynolds (Illustrator)

<https://www.goodreads.com/book/show/25893953-the-water-princess>

And the Ryan's Well Foundation <https://www.ryanswell.ca>

Ted Talk - Kids Against Plastic

<https://www.youtube.com/watch?v=XWxtlgHjxvo>

Documentaries

A Plastic Ocean By: Craig Leeson

National Geographic : Kids Take Action Against Ocean Plastic

<https://video.nationalgeographic.com/video/short-film-showcase/00000159-6bba-d620-a3d9-7bbed2e30000>

The Life Cycle of a Plastic Bottle

https://www.youtube.com/watch?v=_6xINyWPpB8



Insects and Bugs – Respecting all of God’s Creation

Primary – Summer

Blessed Be the Bugs

Bugs big and small,
We are thankful for them all,
We thank God for those little ones that crawl,
We thank God for those who are especially tall,
We are grateful for those who can fly,
Brightening up the blue sky,
Fold your hands and pray,
That all humans will be respectful of the life of an innocent bug today.
Amen



~ (Helen Ellsworth, ALCDSB)

Catholic Graduate Expectation(s) in Action:

I believe that God is an awesome God
I respect all people and their languages
I have thoughts and opinions that matter
I use my gifts and talents given to me by God
I think of others before myself
I care about and respect God’s creation and everything in it!
I stand up for what is right

Faith Connections:

Everyone is Equal in God’s Eyes (and so too the bugs, spiders and worms)!

For many of us, creepy crawlies give us the heebie-jeebies and we think the world would be a better place without them. We treat them with disgust and disregard, waving them away or trying to rid our life of them.

- Name some creepy crawlies that you find icky.

But did you know that most insects, spiders and worms helpful to the Earth or to another living creature for one reason or another. For example, the mosquito is a bothersome insect that zings around our ears on warm evenings, trying hard to land on us so that they can bite us for a bit of blood. We swat at them and wear mosquito repellant to keep mosquitos away from us. The mosquito, however, is a valuable bug if you are a bat. A bat eats about 1200 mosquitos every hour (<https://www.motherearthnews.com/nature-and-environment/control-insects-bolstering-bat-habitat-zmaz01aszsel>)!



Just like people think that some creepy crawlies are pesky, there are people in our world that are treated poorly by others, simply because of who they are or how they live. This is unfortunate since, like insects, spiders and worms, we are all God's creation, and no one is better or ranks higher than another. Every living thing (human or creature) must be treated with respect and kindness.

The bible is filled with stories about Jesus teaching us to treat all people with kindness and respect, no matter what. Share with students some of the stories about Jesus caring for and showing kindness to those who are often turned on or turned away by others in the world:

- Jesus and Zacchaeus (Luke 19:1-10)
- The Parable of the Great Dinner (Luke 14: 15-24)
- Jesus Heals on the Sabbath (John 5:1-9)
- Jesus Cleanses a Leper (Matthew 8:1-4)

These and other stories from the bible remind us that there are people who need help and care in our world and that it is important for us to help them so that they feel worthy and loved.

Who are some people who you think might need help in your community? How can you help them so they feel cared for and that they matter too?

Additional Scripture and Faith-Based Texts:

Proverbs 22:2

The rich and the poor have this in common: The Lord is the maker of them all.

Proverbs 30:24-28

Four things on earth are small, yet they are exceedingly wise:

the ants are a people without strength, yet they provide their food in the summer;

the badgers are a people without power, yet they make their homes in the rocks;

the locusts have no king, yet all of them march in rank;

the lizard can be grasped in the hand, yet it is found in kings' palaces.

Proverbs 6:6-8

Go to the ant, you lazybones; consider its ways, and be wise.

Without having any chief or officer or ruler,

it prepares its food in summer, and gathers its sustenance in harvest.

Principles of Indigenous Learning:

- Engagement with the Land, Nature and the Outdoors
- Relationships and Collaboration
- Storytelling – The power of Story
- Experiential Learning
- Community Involvement



Envision (Minds On)

We often think of insects, spiders and worms as ‘pests’ and sometimes people are quick to harm them, thinking that they are insignificant and a nuisance. Create a chart listing reasons why people often dislike creepy crawlies.

Now, let’s take a closer look at these little lifeforms, created by God, so that we can learn how-to live-in harmony with them while sharing our beautiful world and appreciating some of the good qualities that insects, spiders and worms have.

Sow (Action)

Are insects, spiders and worms the same thing or are they different? Using our local outdoor environment, we can explore the lives of creepy crawlies as we learn more about their individual characteristics, and the benefits they bring to the ecosystem.

Let’s go on a creepy crawly search! This video can help students to become more familiar with creatures that they may encounter while on this environmental excursion in their own local community:

Insects

<https://www.bing.com/videos/search?q=learning+about+insects+for+kids+utube&view=detail&mid=504C9FC985671DF4352F504C9FC985671DF4352F&FORM=VIRE>

<https://www.youtube.com/watch?v=iJlFBNyBKQA>

A general discussion with the students regarding safety guidelines in relation to which dangerous creepy crawlies (bees, wasps, ticks, moth caterpillars) and plants (wild parsnip and poison ivy) should not be touched or captured and what to do if you are bitten or stung is very important before setting off on this outdoor learning adventure. The students need to understand the importance of respecting the insects and that we are to cause no harm to them while learning more about them. Students will need to be provided with a variety of exploration tools for their outdoor exploring such as: bug nets, collectors with imbedded magnifying glasses, observation dishes, and bug friendly tweezers. The children will also need a way to record their finding, either using a paper/clipboard and writing tools or technology such as an iPad for photographing their discoveries.

- What insects could we see on our adventure?
- What insects/bugs should we keep our distance from? Why?
- What activities do we think we might see the insects/bugs engaging in?
- How do insects/bugs benefit the environment?

Invite students to design a prototype of the insect, spider or worm that they observed during their creepy crawly search. Using two-dimensional shapes, have the student choose three two-dimensional shapes to represent their creature’s body. Trace the shapes on a piece of cardboard or a recycled box, the first and third piece need to slightly overlap (connect) to the middle piece to represent a full body. Attach legs (if applicable) from material



chosen by the student. The student can then cover their creature's body using natural material collected from outside.

- What creepy crawly creature will you make?
- What is unique or special about this creature?
- Why is this insect, spider or worm important to our ecosystem?
- What natural materials would work best to represent what the creature's own environment?

We can use our senses to learn more about insects, spiders, and worms. Many students enjoy learning and discovering through hands-on interaction with learning materials. There are many fun sensory activities for students to engage in together or on their own. Creating 'creepy crawly' fossils is a fun way for students to develop a greater understanding of the body formation of specific bugs. You will need to collect many different types of plastic bugs for the children to explore with based on their interests (Dollar Store!). Provide the students with playdough, clay, or plasticine for this activity. The students can use a plastic bug to make a fossil imprint to represent a specific insect or bug. Students are encouraged to compare the fossils of the insects.

- What do you notice about your fossil?
- How is the fossil the same as the plastic insect?
- How is the fossil different from the plastic insect?
- Compare the fossils of different insects. What do you notice about them?
- What wonderings do you have about bugs and insects from this activity?

Nurture (Consolidation)

Discuss with the students as a group what they have learned about insects, spiders and worms and the role that these tiny creatures play in our ecosystem.

- Why did God create bugs and insects?
- What creepy crawlies are helpful to the world?
- What creepy crawlies are harmful to the world?
- What lessons can we learn from creepy crawlies that would help us be better versions of ourselves (for example: teamwork seen in the behaviour of bees and ants)?
- How do insects, worms and spiders adapt to seasonal changes, environmental changes, and the threat of predators (including humans)?
- How can we balance our own needs and safety while respecting the lives of creepy crawlies?

Exploring insects, spiders and worms can be very engaging and captivating for children. You may quickly discover that the students require more time to investigate, explore, question, research and consolidate their learning. This is a great opportunity for students to work cooperatively with another class to form a partnership (with a partner or in a small group) to learn more. You may choose to create an action plan to support them in extending their understanding by branching off to learn about a specific insect, their behaviour, adaption to seasonal changes etc.



Using a knowledge building circle, provide the students with an opportunity to share their previous understandings (beliefs) and their newly discovered knowledge (built through investigation) about the lives of insects and bugs.

- Did their previous ideas about creepy crawlies change? If yes, in what ways?
- What in the environment has influenced them to change their thinking?
- What questions or wonderings do the students have that require further investigations, research or inquiry?
- How can we work together to address our wonderings?
- How can we learn more about specific insects/bugs?
- How can we move forward in our thinking and learning to help others to see insects and bugs in a different way?
- How can we share our learning with each other, with member of our school and with those in our local community?

Curriculum Connections

Religious Education

(Ontario Catholic Elementary Curriculum Policy Document Grades 1-8; 2012 Assembly of Catholic Bishops of Ontario)

Hope Expectations: Living in Solidarity (Grade 1, 2, 3)

Students will appreciate all of creation as a gift and actively fulfill their responsibility to be stewards of God's creation and acknowledge all life as sacred.

Kindergarten

(Ontario Catholic Elementary Curriculum Policy Document – Kindergarten – draft 2019)

Believing - BL 1.2

Students will investigate and explore God's creative world through their everyday interactions with nature and make connections to God as Creator.

Celebrating – CL 3.1

Share personal stories of family gatherings and celebrations

Living a Moral Life – ML 1.3

Come to know who God is through relationships and interactions with their environment

Living in Communion – LC 1.2

Develop an understanding that we belong in a faith community at the centre which is a loving God

Living in Solidarity – LS 2.3

Come to understand that it is our responsibility to be stewards of all the God created

Praying – PR 1.2

Become aware that prayer is different from other class activities



Grade 1

Believing – BL3.3

Compare how families and communities are formed and defined by their common history and stories

Celebrating- CL3.3

Identify the various ways in people communicate with each other and express their thoughts and feelings

Living a Moral Life – ML3

Demonstrate an understanding that as human beings God calls us to grow in holiness

Living in Communion – LC2.2

Describe what it means to belong to God's family and the community of the Church

Living in Solidarity – LS.2

Understand that as human beings made in God's image we are social by nature and are called both as individuals and as a community to offer friendship and charity to all people

Praying – PR.1.1

Understand that prayer is essential to having a relationship with God, with Christ and with one another

Grade 2

Believing - BL3.3

Compare how common shared experiences help to shape families and communities

Celebrating – CL1.3

Identify ways in which we encounter the presence of God

Living a Moral life – ML 3.2

Identify how we receive grace from God and identify ways we can the gift of Grace to help others and build up the Church

Living in Communion – LC2.3

Describe how our families remember ancestors

Living in Solidarity – LS2.3

Identify ways we can express to God that we respect the gift of our 'human dignity' and show respect toward others through our prayers and actions

Praying – PR2.2

Identify that our prayer as Christians should include the needs of other people, the Church, social/environmental issues in our world and how we offer spontaneous prayers of petition for them in our individual and communal prayers

Grade 3

Believing – B3.2

Give examples of how the Church, like a sacrament makes Christ present through its witness

Celebrating- C.3

Compare the way we celebrate special occasions and milestones to remember important personal and family history

Living a Moral Life- ML1

Demonstrate an understanding how God teaches us to be good and to reflect this goodness in our actions



Living in Communion – LC2.2

Identify how the Holy Spirit keeps the presence of Jesus alive in the Church for those who work for unity, justice and peace

Living in Solidarity – LS1

Understand that the Holy Spirit assists us to develop and strengthen our relationship with Jesus and one another through our participation in society

Praying – PR 2.3

Demonstrate an understanding of the importance of the Holy Spirit in guiding us as we learn how to pray as Jesus taught us

Kindergarten – Overall Expectations

(The Kindergarten Program, Ministry of Education, 2016)

OE 1 - Communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

OE10- Demonstrate literacy behaviours that enable beginning writers to communicate with others

OE13- Use the processes and skills of an inquiry stance (questioning, planning, predicting, observing, and communicating)

OE14 - Demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings

OE17- Describe, sort, classify, build and compare two – dimensional shapes... through investigation

OE19- Collect, organize, display and interpret data to solve problems and to communicate information

OE 22 – Communicate their thoughts and feelings, and their theories and ideas, through various art forms

OE23- Use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts

OE24- Use technological problem-solving skills, on their own & with others, in the process of creating & designing (questioning, planning, constructing, analysing, redesigning and communicating

OE 28 – Demonstrate an awareness of their surroundings

OE 29 – Demonstrate an understanding of the natural world and the need to care for and respect the environment

OE 30- Demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in various activities in the arts

Language (Ministry of Education -The Ontario Curriculum - 2006)

Oral Communication - Grade 1, 2, and 3

Listening to Understand

1.2 - Demonstrate an understanding of appropriate listening behaviour by using active listening strategies

Speaking to Communicate

2.2 - Demonstrate an understanding of appropriate speaking behaviour in a variety of situations

Writing - Grade 1, 2, and 3

Developing and Organizing Content

1.1 Identify the topic, purpose, audience and form for writing

1.2 Generate ideas about a potential topic, using a variety of strategies and resources



1.2 Gather information to support ideas for writing in a variety of ways and/or from a variety of sources

The Arts (Ministry of Education – The Ontario Curriculum – 2009)

Visual Arts - Creating and Presenting

D1.3 Use elements of design in art works to communicate ideas, messages, and understandings (Grade 1, 2, and 3)

Grade 1

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by personal experiences

Grade 2

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by activities in their community or observations of nature

Grade 3

D1.1 Create two-and three-dimensional works of art that express personal feelings and ideas inspired by the environment or have the community as their subject

Drama- Creating and Presenting

B1.4 Communicate feelings and ideas to a familiar audience
(Grade 1, 2, and 3)

Mathematics (The Ontario Curriculum – 2005)

Grade 1 – Geometry and Spatial Sense

- Describe similarities and difference between an everyday object and a three - dimensional figure
- Locate shapes in the environment that have symmetry, and describe the symmetry

Grade 2- Geometry and Spatial Sense

- Compose and describe pictures, designs, and patterns by combining two-dimensional shapes
- Locate the line of symmetry in a two-dimensional shape

Grade 3- Geometry and Spatial Sense

- Identify and compare various polygons
- Complete and describe designs and pictures of images that have a vertical, horizontal, or diagonal line of symmetry

Science (Ministry of Education – The Ontario Curriculum – 2007)

Grade 1

Understanding Life Systems – Needs and Characteristics of Living Things

3.5 Describe how showing care and respect for all living things helps to maintain a healthy environment

Grade 2

Understanding Life Systems- Growth and Changes in animals



3.2 Describe an adaptation as a characteristic body part, shape, or behaviour that helps a plant or animal survive in its environment

Grade 3

Understanding Life systems – Growth and Changes in Plants

1.1 Assess ways in which plants are important to humans and other living things

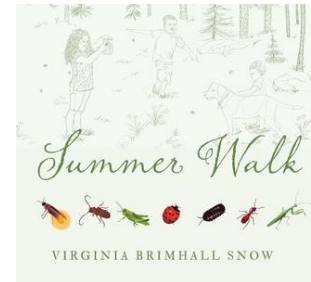
Mentor Text Connections

Summer Walk

By: Virginia Brimhall Snow

The author takes us on a beautiful summer walk to help us to discover the exciting lives and interesting activities of insect and bugs in their own colourful habitats.

<https://www.goodreads.com>

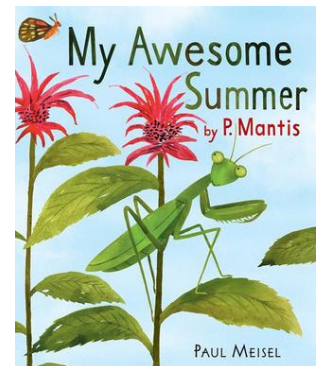


My Awesome Summer by P. Mantis

By: Paul Meisel

The author gives 'Praying Mantis' a voice. The praying mantis tells her life story through her journal entries. There is much more to praying mantis's life than what we might think.

<https://www.goodreads.com>



NOTE: Students can choose their own bug to model journal entries about based on their observations of it while on a bug hunt.

Bug Hunt

By: Tom Story

A little girl goes on an adventure in a garden and shares her discoveries with the reader. As she meets different bugs and insects, she records information about them in her book.

<https://www.goodreads.com>



NOTE: Students can create their own little notebook about the bugs they find while on a bug hunt and share it with a Reading Buddy.



Additional Resources:

Bugs A to Z

By: Caroline Lawton

This book provides great illustrations and fun facts about bugs and insects beginning with ants and moving through the alphabet.

<https://goodreads.com>



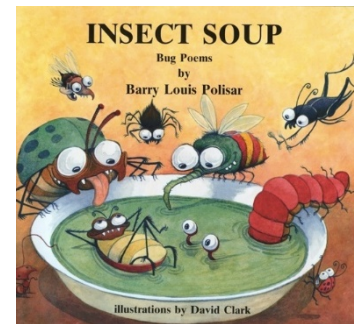
Insect Soup

By: Barry Louis Polisar

The author provides fun poems about different bugs and insects, describing their unique behaviours.

<https://www.goodreads.com>

Note: Have students create bug poems or bug riddles and have others guess which bug they are focusing on.

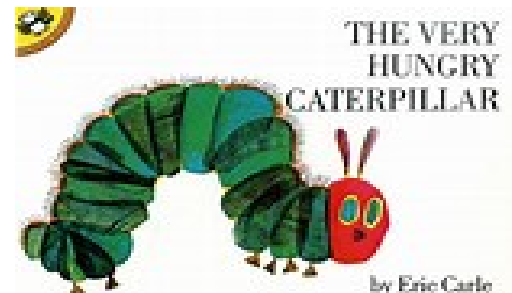


The Hungry Caterpillar

By: Eric Carle

This well-known author tells the story of a caterpillar who is very hungry and eating many different foods, some of them may not be good for a caterpillar, nevertheless the caterpillar continues to eat and eat. This story lends itself to so many creative connections between literacy, math, science and art.

<https://www.goodreads.com>



All things Bright and Beautiful – Song

https://www.youtube.com/watch?v=FT_oDqOEGpc

Peace Like A River - Song

<https://www.bing.com/videos/search?q=peace+is+flowing+like+a+river+for+kids>



Summer Sunshine

Primary - Summer

All things Bright and Beautiful

All things bright and beautiful,
All creatures great and small,
All things wise and wonderful:
You, Lord God, made them all,
Each little flower that opens,
Each little bird that sings,
You made their glowing colours,
You made their tiny wings.

The purple headed mountains,
The river running by,
The sunset and the morning
That brightens up the sky.

The changing of the seasons,
The pleasant summer sun,
The ripe fruits in the garden,
You made them everyone.

You gave us eyes to see them,
And lips that we might tell,
How great is God, Almighty?
Who has made all things well.



(A hymn by Cecil F. Alexander, slightly revised. Public domain.)

<https://www.guideposts.org/faith-and-prayer/prayer-stories/pray-effectively/6-summer-prayers>

Catholic Graduate Expectation(s) in Action:

I believe that God is an awesome God.
I listen to the word of God.
I solve problems with knowledge, understanding and prayer.
I use my gifts and talents given to me by God.
I value everyone's work.
I care about and respect God's creation and everything in it.
I follow rules and do my share.



Faith Connections:

Matthew 13:43

Then the righteous will shine like the sun in the kingdom of their Father. Let anyone with ears listen!

Isaiah 18:4

For thus the Lord said to me: I will quietly look from my dwelling like clear heat in sunshine, like a cloud of dew in the heat of harvest.

Psalms 113: 3

From the rising of the sun to its setting the name of the Lord is to be praised.

Jesus is our Sunshine, the Light of our World!

Genesis 1:3-6

Then God said, “Let there be light”; and there was light. And God saw that the light was good; and God separated the light from the darkness. God called the light Day, and the darkness he called Night. And there was evening and there was morning, the first day

- God made the sun and he gave it the job of ruling over the day. What does that mean? What kinds of things does the sun do for the Earth and the creatures of the Earth?

John 8:12

Again Jesus spoke to them, saying, “I am the light of the world. Whoever follows me will never walk in darkness but will have the light of life.”

- What does Jesus mean when he says, “I am the light of the world”? What does he mean when he refers to walking in darkness?
- How is Jesus like the Sun, keeping our Earth warm and healthy and beautiful?
- How might we act like rays of sunshine for others?

Principles of Indigenous Learning:

- Engagement with the Land, Nature and the Outdoors
- Relationships and Collaboration
- Storytelling – The Power of Story
- Experiential Learning
- Community Involvement

Envision (Minds On)

The summer sun that shines so brightly and brings us opportunities to enjoy the outdoors can also cause serious and painful damage to our skin and eyes without proper protection. The warm sunny days of May and June are great opportunities to explore the wonder of the sun, while learning ways to keep safe from the sun’s harmful rays.



Sow (Action)

The sun is an important part of our solar system. God gave the sun to all living things so that the world might have warmth, light, and energy. We need to recognize that while the sun is helpful and essential to life, it can also be very dangerous.

Invite your students to participate in an 'energy' experiment. Have students cut out a circle from yellow paper to represent the sun. Using clear tape, attach the yellow sun to the middle of a small (4x6) piece of blue paper. It is important to make sure that the tape is under the sun, as you do not want the tape to interfere with the exposed blue paper's reaction to the sun. You will need to tape each of the student's papers to a window in your classroom or your school with their 'sun' facing outwards. Leave the paper on the window, exposed to the sun for 2 to 5 days. Have the children discuss their predictions regarding what will happen to the 'exposed' blue paper outside of the sun and what will happen to the blue paper that is not 'exposed' (hidden under the paper sun). Have the students share their predictions with each other during a knowledge building circle. After two days remove the papers from the window and have the children remove the yellow sun from their blue paper. Were their predictions correct? You may want to extend your experiment for additional days by re-covering the 'unexposed' area and placing the paper back in the window. How will the exposed blue paper look/change after extended time in the sunlight? What will the colour be after 7 days? After 10 days?

Questions for the children to discuss and consider at the beginning of the 'energy' experiment:

- What do you think will happen to your 'sun' picture?
- How long do you think it will take before you start to see a change in your picture?
- What might the changes look like?
- Why is the picture changing?
- If the sun is strong enough to create changes in paper, what changes can it create in humans?

(Additional activities related to the Sun and Energy can be found in the resource: Hands on Science and Technology, Grade One, 2008 Jennifer Lawson, Portage and Main Press, Winnipeg Manitoba, Canada, Unit 3 – Lesson #2, p. 142 – Energy from the Sun)

We are learning that the sun is very powerful. Using ice cubes invite the students to participate in an experiment. Each child will need an ice cube that has been placed in a cup (plastic yogurt cups are great for this activity). Have each student find a location outside with their ice cube. Encourage the children to spread out in the outdoor area with their ice cube in a cup. Students should not hold the cups as the body heat from their hands could impact results. Provide the students with some form of timer to track the melting time of their ice cube. Have the children observed any changes in their ice cube? What changes do we see in one minute? 3 minutes? 5 minutes? Etc.

- Is the ice cube changing?
- How is it changing?
- Whose ice cubes melted first?
- Whose ice cube melted last?
- Why did some of the ice cubes melt more quickly?



- How can we measure the changes that we are seeing in the ice cubes?
- Are there some areas outside that are more protected from the sun?
- What in the environment can contribute to sun protection?
- What can we use to protect ourselves from the powerful rays of the sun?
- Why is important to protect ourselves from the sun?

Invite the students to use their problem-solving skills to create an item (hat, sunglasses, sun shelter etc.) which will protect them from the sun. Encourage them to use STEAM thinking (science, technology, engineering, art, and math) to design and create by themselves or with a partner an item that they can use to maximize their outside time on sunny days and minimize any personal harm from the sun. (Collect recyclable materials such as: cardboard, Kleenex boxes, paper towel rolls, toilet paper rolls etc. in advance for this activity).

- What would they create?
- Why would they choose to create this sun protection item?
- What materials would they need to use to create their prototype?
- Is the type of material used important? Why is it important for this task?
- How will they test their sun protection item to find out if it works?

NOTE: *Follow this link to find out how the Inuit invented snow-goggles, which are really the first sunglasses:*
<http://www.crayola.ca/crafts/inuit-snow-goggles-craft/>

Nurture (Consolidation)

Discuss with the students the energy of the sun and the ways in which it can benefit humans, animals and the environment; as well as ways in which it can cause harm.

- How powerful is the sun? How do you know?
- How does the sun help humans, animals and the environment?
- What activities can we enjoy on a warm, sunny summer day?
- How can the sun cause damage or harm animals?
- How do animals protect themselves from the sun?
- How can we enjoy the sun and protect ourselves from its powerful rays?
- When is the sun the hottest during the day?

If students need more information about the sun, you can show them the video, 'Sun Song for Kids'. It describes the sun's position in the solar system and its' role in providing energy to the Earth:

<https://www.bing.com/videos/search?q=the+sun+for+kids+utube&view>

- Discuss with a community partner the importance of the sun and the role it played in the lives of indigenous people before electricity? What traditional stories can the community partner share about the sun? What teachings does the sun present to us that helps us in learning more about its importance?



- What new knowledge about summer and the role of sun in our daily lives have students gained from these learning opportunities? How can they best share their own personal experiences and understanding of the ways in which they can enjoy the sun while remaining safe from the negative effects of too much sun exposure (photographs, pic-collage, illustrations, written responses, oral stories shared, poems, songs, video, art created using pastels, and/or art created from recyclable materials)?
- Explore the relationship between the sun's movement across the sky (time of day) and temperature. Create graphs to track the temperature and time of day. What do the students notice? What are the implications of their findings?

Curriculum Connections

Religious Education

(Ontario Catholic Elementary Curriculum Policy Document Grades 1-8; 2012 Assembly of Catholic Bishops of Ontario)

Hope Expectations: Living in Solidarity (Grade 1, 2, 3)

Students will appreciate all of creation as a gift and actively fulfill their responsibility to be stewards of God's creation and acknowledge all life as sacred.

Kindergarten

(Ontario Catholic Elementary Curriculum Policy Document – Kindergarten – draft 2019)

Believing - BL 1.2

Students will investigate and explore God's creative world through their everyday interactions with nature and make connections to God as Creator.

Celebrating – CL 3.1

Share personal stories of family gatherings and celebrations

Living a Moral Life – ML 1.3

Come to know who God is through relationships and interactions with their environment

Living in Communion – LC 1.2

Develop an understanding that we belong in a faith community at the centre which is a loving God

Living in Solidarity – LS 2.3

Come to understand that it is our responsibility to be stewards of all the God created

Praying – PR 1.2

Become aware that prayer is different from other class activities

Grade 1

Believing – BL3.3

Compare how families and communities are formed and defined by their common history and stories

Celebrating- CL3.3

Identify the various ways in people communicate with each other and express their thoughts and feelings



Living a Moral Life – ML3

Demonstrate an understanding that as human beings God calls us to grow in holiness

Living in Communion – LC2.2

Describe what it means to belong to God's family and the community of the Church

Living in Solidarity – LS.2

Understand that as human beings made in God's image, we are social by nature and are called both as individuals and as a community to offer friendship and charity to all people

Praying – PR.1.1

Understand that prayer is essential to having a relationship with God, with Christ and with one another

Grade 2**Believing - BL3.3**

Compare how common shared experiences help to shape families and communities

Celebrating – CL1.3

Identify ways in which we encounter the presence of God

Living a Moral life – ML 3.2

Identify how we receive grace from God and identify ways we can the gift of Grace to help others and build up the Church

Living in Communion – LC2.3

Describe how our families remember ancestors

Living in Solidarity – LS2.3

Identify ways we can express to God that we respect the gift of our 'human dignity' and show respect toward others through our prayers and actions

Praying – PR2.2

Identify that our prayer as Christians should include the needs of other people, the Church, social/environmental issues in our world and how we offer spontaneous prayers of petition for them in our individual and communal prayers

Grade 3**Believing – B3.2**

Give examples of how the Church, like a sacrament makes Christ present through its witness

Celebrating- C.3

Compare the way we celebrate special occasions and milestones to remember important personal and family history

Living a Moral Life- ML1

Demonstrate an understanding how God teaches us to be good and to reflect this goodness in our actions

Living in Communion – LC2.2

Identify how the Holy Spirit keeps the presence of Jesus alive in the Church for those who work for unity, justice and peace

Living in Solidarity – LS1

Understand that the Holy Spirit assists us to develop and strengthen our relationship with Jesus and one another through our participation in society

Praying – PR 2.3

Demonstrate an understanding of the importance of the Holy Spirit in guiding us as we learn how to pray as Jesus taught us

Kindergarten – Overall Expectations

(The Kindergarten Program, Ministry of Education, 2016)

OE 1 - Communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

OE10- Demonstrate literacy behaviours that enable beginning writers to communicate with others

OE13- Use the processes and skills of an inquiry stance (questioning, planning, predicting, observing, and communicating)

OE14 - Demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings

OE17- Describe, sort, classify, build and compare two – dimensional shapes... through investigation

OE19- Collect, organize, display and interpret data to solve problems and to communicate information

OE 22 – Communicate their thoughts and feelings, and their theories and ideas, through various art forms

OE23- Use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts

OE24- Use technological problem-solving skills, on their own & with others, in the process of creating & designing (questioning, planning, constructing, analysing, redesigning and communicating

OE 28 – Demonstrate an awareness of their surroundings

OE 29 – Demonstrate an understanding of the natural world and the need to care for and respect the environment

OE 30- Demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in various activities in the arts

Language (Ministry of Education -The Ontario Curriculum - 2006)

Oral Communication - Grade 1, 2, and 3

Listening to Understand

1.2 - Demonstrate an understanding of appropriate listening behaviour by using active listening strategies

Speaking to Communicate

2.2 - Demonstrate an understanding of appropriate speaking behaviour in a variety of situations

Writing - Grade 1, 2, and 3

Developing and Organizing Content

1.1 Identify the topic, purpose, audience and form for writing

1.2 Generate ideas about a potential topic, using a variety of strategies and resources

1.2 Gather information to support ideas for writing in a variety of ways and/or from a variety of sources

The Arts (Ministry of Education – The Ontario Curriculum – 2009)



Visual Arts - Creating and Presenting

D1.3 Use elements of design in art works to communicate ideas, messages, and understandings (Grade 1, 2, and 3)

Grade 1

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by personal experiences

Grade 2

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by activities in their community or observations of nature

Grade 3

D1.1 Create two-and three-dimensional works of art that express personal feelings and ideas inspired by the environment or have the community as their subject

Drama- Creating and Presenting

B1.4 Communicate feelings and ideas to a familiar audience
(Grade 1, 2, and 3)

Mathematics (Ministry of Education – The Ontario Curriculum - 2005)

Data Management and Probability

Grade 1

- Collect and organize categorial primary data and display the data using concrete graphs, pictographs...
- Read and describe the primary data presented in concrete graphs and pictographs

Grade 2

- Collect and organize categorial or discrete primary data and display the data, using tally charts, concrete graphs, pictographs

Grade 3

- Collect and organize categorical or discrete primary data and display the data using charts and graphs

Science (Ministry of Education – The Ontario Curriculum – 2007)

Grade 1

Understanding Structures and Mechanisms – Materials, objects, and everyday Structures

2.3 Investigate through experimentation the properties of various materials

2.6 Use a variety of forms to communicate with different audiences and for a variety of purposes

Understanding Matter and Energy – Energy in our lives

2.6 Investigate how the sun's energy allows humans to meet their basic needs, including the need for food

Understanding Earth and Space Systems – Daily and Seasonal Changes

3.6 Describe how humans prepare for and/or respond to daily and seasonal changes

Grade 2

Understanding Matter and Energy – Properties of Liquids and Solids

3.4 Identify conditions in which the states of liquids and solids remain constant and conditions that can cause their states to change



Understanding Earth and Space Systems – Air and Water in the Environment

2.5 Investigate water in the natural environment

2.6 Use appropriate science and technology vocabulary in oral and written communication

Grade 3

Understanding Structures and Mechanisms – Strong and Stable Structures

2.2 Investigate through experimentation, how various materials can be used to add strength to structures

Mentor Text Connections

Summer Color!

By: Diana Murray

This colourfully illustrated storybook has lots of descriptive language to help the students envision a 'hot' summer day. The power of the sun is very evident in this read aloud. The author provides many fun ways for the children to stay cool and enjoy summertime.

<https://www.bing.com/videos/search?q=summer+color+by+diana+murray>

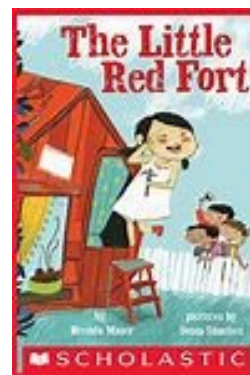


The Little Red Fort

By: Brenda Maier

The author follows a similar story line to that of the traditional 'Little Red Hen'. Ruby is interested in building a fort and through perseverance and planning she is successful. The boys in this story are excited by what she has created and decide that they would like to be part of the fun adventures that are about to take place in 'The Little Red Fort'. This is a great text to encourage creative STEAM planning, designing and building.

<https://www.goodreads.com>

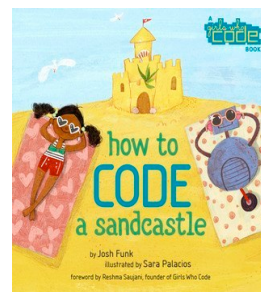


How to code a sandcastle

By: Josh Funk

This is a fantastic book for those interested in introducing 'code' activities to their students. The author uses rich vocabulary including specific coding language as Pearl and Pascal the robot work together to create a sandcastle. The author focuses on the importance of being clear and concise when giving coding instructions to ensure that the robot is creating what you intended. This supports students working together to co-create a summer artifact using STEAM.

<https://www.bing.com/videos/search?q=how+to+code+a+sandcastle+by+josh+funk>



Additional Resources:

The Golden Glow

By: Benjamin Flouw

The Author takes you on an adventure in search of a special 'flower'. The illustrations contain many powerful details and lend itself to supporting students creating their own 'special' summer artifact. A great read!

<https://www.bing.com/videos/search?q=the+golden+glow+book+utube>



A Perfect Day

By: Lane Smith

The author helps us to experience what a perfect summer day means for each of the animals in the story. Each of the animals has a different experience and a different 'perfect' day. It is a good story to help children think about what their perfect summer day might look like. How is this day the same or different as that of their friends?

<https://www.goodreads.com/book/show/28965128-a-perfect-day>



Mr. Sun

By: Raffi

This interactive video with screen text invites the sun to come out and join in the fun with the children who are eagerly awaiting its arrival.

<https://www.youtube.com/watch?v=WmR7y8uXpEE>

Sun Safe Play Everyday

This informative video is great for teaching young children (K-1) the importance of protecting yourself from the sun (hat, sunglasses, sunscreen) while enjoying warm summer days. It teaches them a simple song to the tune of 'twinkle, twinkle little star'.

<https://www.bing.com/videos/search?q=sun+safe+play+everyday+utube&qpv=sun+safe+play+everyday+utube&view=detail&mid=ED56819E89A879D98EFAED56819E89A879D98EFA&&FORM=VRDGAR>

Here I am to Worship

By: Jason Whitfield

This is a wonderful song to remind us that God is always with us and that as we enter the summer season of fun and excitement, we need to remember to give thanks and to live our lives like Jesus.

<https://www.bing.com/videos/search?q=religious+songs+for+kids+utube>



A time to Harvest – Local Resources

Primary – Fall

Thank you, God

Dear God,
Thank you, God, for sun and rain,
That make all things grow.
Thank you for the farmers,
That work to reap and sow.
Thank you for the moms and dads,
That make us lovely food.
Thank you, God, for everything,
Your world is so wonderful!
Amen



https://www.living-prayers.com/events/thanksgiving_prayer.html#ixzz5trJbOyB6

Catholic Graduate Expectation(s) in Action:

I believe that God is an awesome God.
I believe that we can talk to God anytime and anywhere, through prayer.
I respect all people and their languages.
I have thoughts and opinions that matter.
I am thankful for the gifts of others.
I think of others before myself.
I care about and respect God's creation and everything in it.
I help the poor and care for people in need.

Faith Connections:

Psalm 67:6

The earth has yielded its increase; God, our God, has blessed us.

Psalm 85:12

The Lord will give what is good, and our land will yield its increase.

Psalm 107:37

they sow fields, and plant vineyards, and get a fruitful yield.

A Time for Thanksgiving:

Invite colleagues to work collaboratively to join the Kindergarten to Grade 3 students together for an outdoor prayer service to give thanks to God and to celebrate the fall harvest. Choose an outdoor area to gather and



select students to participate in different roles of the ministry. Invite students to bring a fall fruit or vegetable to be donated to a local agency that supports those in the community who lack food security (e.g. a soup kitchen). To prepare the students before the prayer service, and to involve them in the preparations, discuss the following:

- How can we make outdoor spaces ‘sacred’ places where we can be mindful and pray?
- How can we use the fall harvest as a time to reflect, pray and help those less fortunate in our classrooms, schools and community?

Readings:

Psalm 138:1

I give you thanks, O Lord, with my whole heart; before the gods I sing your praise;

Prayer of Thanksgiving

For each new morning with its light,
For rest and shelter of the night,
For health and food,
For love and friends,
For everything that thy goodness sends.
Ralph Waldo Emerson (1803-1882)

<https://www.lordsprayerwords>

Principles of Indigenous Learning:

- Engagement with the Land, Nature and the Outdoors
- Relationships and Collaboration
- Storytelling – The Power of Story
- Experiential Learning
- Community Involvement

Envision (Minds On)

Ontario has some of the most delicious fruits and vegetables that are only available in the Fall. Autumn is an opportune time to learn about fruits and vegetables that are grown and harvested in your local communities. What kinds of fruits and vegetables do we usually see in the Fall/Autumn?

Sow (Action)

The Autumn harvest is an opportunity for you and your students to learn more about the fruits and vegetables that are harvested during the Fall and about how important the harvest of these essential foods was for our ancestors and are for us today.



Take your students on an outdoor adventure to participate in a reenactment of the Fall Harvest. Have each student take a clipboard, paper, and writing tool to document their thinking in the form of a picture, words, or a short sentence. Explore in an area that is a good location for spotting fruits or vegetables growing and ready to harvest. Using their senses, invite your students to envision themselves preparing for harvest.

- What do they see, hear, smell, touch, and taste about the fruits and vegetables that they notice?
- What fruits and vegetables would be harvested from the ground, a vine, and a tree?
- How would they know that the fruit/vegetables are ready for harvest?

As a class discuss ‘apples’ as a local fall fruit and the ways in which students have enjoyed eating them.

- What do we know about apples?
- Has anyone picked an apple from a tree?
- What kinds of apples are there?
- What makes the many types of apples different from each other?
- What makes the many types of apples the same?
- What are the different ways that you can enjoy apples?
- Has anyone ever eaten apple pie, apple crisp, candy apples and or apple sauce?



Invite the students to help in the preparation of apple sauce, that can be shared and enjoyed by all. (Check the ingredient list for any possible allergies) You may want to co-create a ‘procedural’ anchor chart with your students to describe the procedure used to make the apple sauce. You can use your own recipe or one of the suggestions below:

- If Kids Can Do It: How to make apple sauce (<https://www.youtube.com/watch?v=xbwzXMqIE8Q>)
- <https://www.simplyrecipes.com/recipes/applesauce/>

Nurture (Consolidation)

Discuss the students’ understanding of the importance of the Fall Harvest and what it means to them as an individual and as a member of our community of learners.

Watch the Video - A Canadian Thanksgiving (This beautiful video is set to music and depicts Fall images without words or text) <https://www.youtube.com/watch?v=n2kBF4uWZDs>

- What do you think of when you think of Autumn?
- Why is it important to celebrate the Fall Harvest and Thanksgiving?
- How can we celebrate the Fall Harvest and Thanksgiving?
- What family activities/traditions do you honour during this time?
- What locally grown fruits and vegetables are part of the Fall Harvest?

(If students need support in identifying locally grown fruits and vegetables, Foodland Ontario provides an easy-to-use guide on the Foodland Ontario website <http://www.ontario.ca>)

- How can we cultivate a greater interest in trying different locally grown fall fruits and vegetables?
- How can we gather together in prayer and thanks outside of our classrooms?



- How would students best like to share their experiences and understanding of the importance of the Fall harvest and Thanksgiving (photographs, pic-collage, illustrations, written responses, oral stories shared, poems, songs, video, and/or art created using different mediums)?
- Invite a farmer or orchard owner into the classroom or visit a farm or orchard to explore the fruits and vegetables of fall in more detail. Which fruits and vegetables are most familiar, and which are not? What words do the students choose to use to describe the fruits and vegetables that they learn about? Have the students write about a fruit or vegetable they find most interesting.
- Think about different ways to sort and organize the fruits and vegetables of fall. How might you compare them with each other (e.g. mass, length/height, size, etc.).

Curriculum Connections

Religious Education

(Ontario Catholic Elementary Curriculum Policy Document Grades 1-8; 2012 Assembly of Catholic Bishops of Ontario)

Hope Expectations: Living in Solidarity (Grade 1, 2, 3)

Students will appreciate all of creation as a gift and actively fulfill their responsibility to be stewards of God's creation and acknowledge all life as sacred.

Kindergarten

(Ontario Catholic Elementary Curriculum Policy Document – Kindergarten – draft 2019)

Believing - BL 1.2

Students will investigate and explore God's creative world through their everyday interactions with nature and make connections to God as Creator.

Celebrating – CL 3.1

Share personal stories of family gatherings and celebrations

Living a Moral Life – ML 1.3

Come to know who God is through relationships and interactions with their environment

Living in Communion – LC 1.2

Develop an understanding that we belong in a faith community at the centre which is a loving God

Living in Solidarity – LS 2.3

Come to understand that it is our responsibility to be stewards of all the God created

Praying – PR 1.2

Become aware that prayer is different from other class activities

Grade 1

Believing – BL3.3

Compare how families and communities are formed and defined by their common history and stories

Celebrating- CL3.3

Identify the various ways in people communicate with each other and express their thoughts and feelings

Living a Moral Life – ML3

Demonstrate an understanding that as human beings God calls us to grow in holiness



Living in Communion – LC2.2

Describe what it means to belong to God’s family and the community of the Church

Living in Solidarity – LS.2

Understand that as human beings made in God’s image we are social by nature and are called both as individuals and as a community to offer friendship and charity to all people

Praying – PR.1.1

Understand that prayer is essential to having a relationship with God, with Christ and with one another

Grade 2**Believing - BL3.3**

Compare how common shared experiences help to shape families and communities

Celebrating – CL1.3

Identify ways in which we encounter the presence of God

Living a Moral life – ML 3.2

Identify how we receive grace from God and identify ways we can the gift of Grace to help others and build up the Church

Living in Communion – LC2.3

Describe how our families remember ancestors

Living in Solidarity – LS2.3

Identify ways we can express to God that we respect the gift of our ‘human dignity’ and show respect toward others through our prayers and actions

Praying – PR2.2

Identify that our prayer as Christians should include the needs of other people, the Church, social/environmental issues in our world and how we offer spontaneous prayers of petition for them in our individual and communal prayers

Grade 3**Believing – B3.2**

Give examples of how the Church, like a sacrament makes Christ present through its witness

Celebrating- C.3

Compare the way we celebrate special occasions and milestones to remember important personal and family history

Living a Moral Life- ML1

Demonstrate an understanding how God teaches us to be good and to reflect this goodness in our actions

Living in Communion – LC2.2

Identify how the Holy Spirit keeps the presence of Jesus alive in the Church for those who work for unity, justice and peace

Living in Solidarity – LS1

Understand that the Holy Spirit assists us to develop and strengthen our relationship with Jesus and one another through our participation in society

Praying – PR 2.3

Demonstrate an understanding of the importance of the Holy Spirit in guiding us as we learn how to pray as Jesus taught us

Kindergarten – Overall Expectations

(The Kindergarten Program, Ministry of Education, 2016)

OE 1 - Communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

OE6- Demonstrate an awareness of their own health and well-being

OE10- Demonstrate literacy behaviours that enable beginning writers to communicate with others

OE14 - Demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings

OE17- Describe, sort, classify, build and compare two – dimensional shapes... through investigation

OE 22 – Communicate their thoughts and feelings, and their theories and ideas, through various art forms

OE 28 – Demonstrate an awareness of their surroundings

OE 29 – Demonstrate an understanding of the natural world and the need to care for and respect the environment

OE 30- Demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in various activities in the arts

Language (Ministry of Education -The Ontario Curriculum - 2006)

Oral Communication - Grade 1, 2, and 3

Listening to Understand

1.2 - Demonstrate an understanding of appropriate listening behaviour by using active listening strategies

Speaking to Communicate

2.2 - Demonstrate an understanding of appropriate speaking behaviour in a variety of situations

Writing - Grade 1, 2, and 3

Developing and Organizing Content

1.1 Identify the topic, purpose, audience and form for writing

1.2 Generate ideas about a potential topic, using a variety of strategies and resources

1.2 Gather information to support ideas for writing in a variety of ways and/or from a variety of sources

The Arts (Ministry of Education – The Ontario Curriculum – 2009)

Visual Arts - Creating and Presenting

D1.3 Use elements of design in art works to communicate ideas, messages, and understandings (Grade 1, 2, and 3)

Grade 1

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by personal experiences

Grade 2

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by activities in their community or observations of nature

Grade 3

D1.1 Create two-and three-dimensional works of art that express personal feelings and ideas inspired by the environment or have the community as their subject

Drama- Creating and Presenting

B1.4 Communicate feelings and ideas to a familiar audience (Grade 1, 2, and 3)



Health and Physical Education

(Ministry of Education – The Ontario Curriculum -2010 - In-term Edition – Re-issued 2018)

Healthy Living – Making Healthy Choices

Grade 1

Healthy Eating

C2.1 Describe how the food groups in Canada’s Food Guide can be used to make healthy food choices

Grade 2

Healthy Eating

C2.1 Use Canada’s Food Guide...and identify food and beverage choices that enhance healthy growth and development

Grade 3

Healthy Eating

C2.1 Demonstrate an understanding of the importance of good oral health to overall health, and assess the effect of different food choices on oral health

Mathematics (The Ontario Curriculum – 2005)

Grade 1 – Geometry and Spatial Sense

- Describe similarities and difference between an everyday object and a three - dimensional figure
- Locate shapes in the environment that have symmetry, and describe the symmetry

Grade 2- Geometry and Spatial Sense

- Compose and describe pictures, designs, and patterns by combining two-dimensional shapes
- Locate the line of symmetry in a two-dimensional shape

Grade 3- Geometry and Spatial Sense

- Identify and compare various polygons
- Complete and describe designs and pictures of images that have a vertical, horizontal, or diagonal line of symmetry

Science (Ministry of Education – The Ontario Curriculum – 2007)

Grade 1

Understanding Life Systems – Needs and Characteristics of Living Things

3.5 Describe how showing care and respect for all living things helps to maintain a healthy environment

Grade 2

Understanding Earth and Space Systems – Air and water in the Environment

3.3 Describe ways in which living things, including humans, depend on air and water

Grade 3

Understanding Life systems – Growth and Changes in Plant

1.1 Assess ways in which plants are important to humans and other living things

Social Studies (Ministry of Education - The Ontario Curriculum 2013)

Grade 1

Heritage and Identity: Our Changing Roles and Responsibilities



A1.4 Describe the impact that people can have on each other in some different situations and some of the ways in which interactions between people can affect a person's sense of self

People and Environments: The Local Community

B2.1 Formulate questions to guide investigations into some aspects of the interrelationship between people and the natural and built features in their community

Grade 2

Heritage and Identity: Changing family and Community Traditions

A3.2 Identify some different groups in their community

A3.6 Identify some ways in which heritage is passed on through various community celebrations and events

People and Environments: Global Communities

B1.3 Demonstrate an understanding of the importance of sustainability in people's interrelationship with their natural environment

Grade 3

Heritage and Identity: Communities in Canada, 1780-1850

A1.3 Identify some key components of the Canadian identity

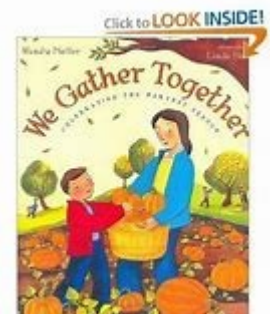
Mentor Text Connections

We Gather Together: Celebrating the Harvest Season

By: Wendy Pfeffer

The author shares with us the uniqueness of the 'Autumnal' Equinox and fall traditions that are honoured in different cultures.

<https://www.scholastic.com/teachers/books/we-gather-together-by-wendy-pfeffer/>

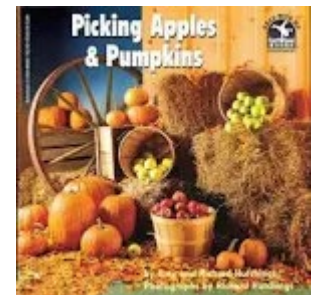


Picking Apples & Pumpkins

By: Amy and Richard Hutchin

This is a great book to help students learn more about the experiences one might have at the apple orchard. In the story the grandmother makes step-by-step pies with the children. This text could easily lend itself to fall activities that require a procedure to complete and for those interested, procedural writing.

<https://www.scholastic.com/teachers/books/picking-apples-and-pumpkins-by-richard-hutchings>

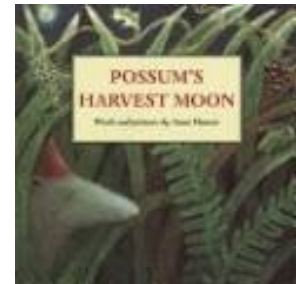


Possum's Harvest Moon

By: Anne Hunter

This book helps the reader to understand that animals also must prepare for seasonal changes. In this colourfully illustrated text, Possum invites his friends to celebrate the great big 'harvest' moon during a beautiful Autumn night before they prepare for winter.

<https://www.scholastic.com/teachers/books/possum-s-harvest-moon-by-anne-hunter>

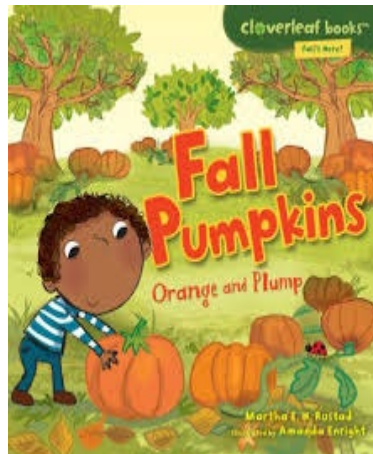
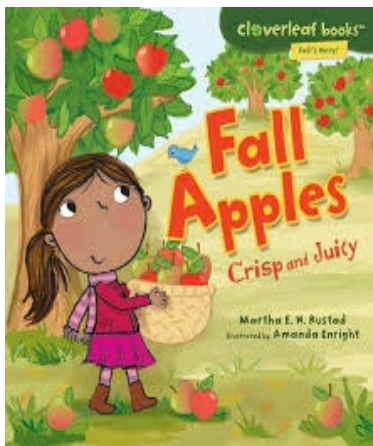


Additional Resources:

Fall Exploration & Discovery Books

By: Martha E. H. Rustad

A great collection of books that explain the mystery and magic of foods that grow later in the growing season and are harvested in the Fall. This series of books have a rich 'fall' vocabulary to support student learning.



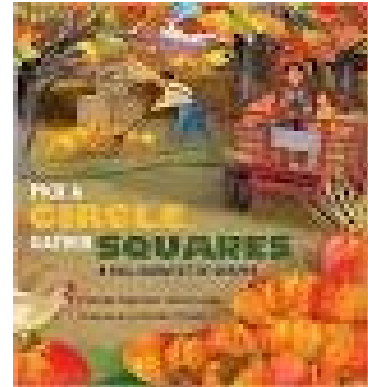
<https://goodreads.com>



Pick a Circle, Gather Squares – A Fall Harvest of Shapes **By: Felicia Sanazan Chernesky**

This colourful book takes students on a ‘fall’ shape adventure as they watch a family travel to the pumpkin patch. The author makes lots of visual connections between the sights of Autumn and 2-D geometrical shapes.

<https://www.goodreads.com>



Let’s Harvest – Harvest Festival Song Teaching Resource

This easy to learn song is presented orally and with matching sign language. A great way to teach the students some fall vocabulary using sign language.

<https://www.youtube.com/watch?v=5Vv65Xqin0E>

10,000 Reasons **By: Matt Redmond**

This is an amazing song that the students can learn to sing together to celebrate all the wonderful things that have been given to us by God.

<https://www.bing.com/videos/search?q=10+000+reasongs+with+lyrics+utube&view=detail&mid=63C63EBBE21549D544DF63C63EBBE21549D544DF&FORM=VIRE>



Welcoming Seasonal Changes in Fall

Primary – Fall

An Autumn Prayer

O God of Creation, you have blessed us with the changing of the seasons.

As we embrace these autumn months,
May the earlier setting of the sun, remind us to take time to rest.
May the crunch of the leaves beneath our feet, remind us of the brevity of this Earthly life.

May the steam of our breath in the cool air, remind us that it is you who gives us the breath of life.

May the scurrying of the squirrels and the migration of the birds remind us that you call us to follow your will.

We praise you for your goodness now and forever and ever.

Amen



<http://www.catholicfamilyfaith.com>

Catholic Graduate Expectation(s) in Action:

I believe that God is an awesome God.

I respect all people and their languages.

I have thoughts and opinions that matter.

I accept change.

I co-operate with others in all that I do.

I care about and respect God's creation and everything in it.

I respect and protect the world and all that is in it.

Faith Connections:

Jesus Teaches Us that Change Can Be a Good Thing!

Change is a part of life. As we grow and live out our life, we go through a number of changes. Some of the changes we experience can be tough or uncomfortable. Perhaps we've had to move to a new home, but we really liked our old house a lot. Perhaps we've lost a loved one or a pet and we really miss them. Or perhaps our eyesight has weakened, and we've had to adjust to life wearing glasses.

Autumn is a time of change, but it is a season that reminds us that change can be wonderful. Trees that were a luscious green in summer, turn to bright oranges, reds, and yellows in the fall. Summer flowers die and are replaced with fall flowers like mums that bloom burgundy, purple, yellow and white. Apples and pumpkins



ripen, and the air turns crisp and fresh. Summer holidays end, and a new school year begins, bringing the opportunity for new friendships, new learning, and new adventures.

- What changes have you experienced? Do you feel they were negative or positive changes? Is it possible that a negative change might have some positive outcomes?

The story of Jesus' first miracle also reminds us that change can be a thing, bringing joy and happiness. Share with students John 2:1-12 "The Wedding at Cana":

On the third day there was a wedding in Cana of Galilee, and the mother of Jesus was there. Jesus and his disciples had also been invited to the wedding. When the wine gave out, the mother of Jesus said to him, "They have no wine." And Jesus said to her, "Woman, what concern is that to you and to me? My hour has not yet come." His mother said to the servants, "Do whatever he tells you." Now standing there were six stone water jars for the Jewish rites of purification, each holding twenty or thirty gallons. Jesus said to them, "Fill the jars with water." And they filled them up to the brim. He said to them, "Now draw some out, and take it to the chief steward." So they took it. When the steward tasted the water that had become wine, and did not know where it came from (though the servants who had drawn the water knew), the steward called the bridegroom and said to him, "Everyone serves the good wine first, and then the inferior wine after the guests have become drunk. But you have kept the good wine until now." Jesus did this, the first of his signs, in Cana of Galilee, and revealed his glory; and his disciples believed in him.

After this he went down to Capernaum with his mother, his brothers, and his disciples; and they remained there a few days.

Jesus changed the water into wine so that the wedding feast could continue on and all of the wedding guests could continue to celebrate the marriage of the bride and groom. By changing the water into wine, he also showed the power of his faith and love in God, which also changed the way that people saw Jesus - they then understood how special he was. The changing of the water into wine at the wedding in Cana was the first of Jesus' miracles, astonishing and awesome testaments to the greatness of God!

- Why is Jesus changing water into wine at the wedding in Cana a joyful and beautiful change?
- How does the story of Jesus' first miracle "The Wedding at Cana" reflect the astonishing and awesome greatness of God?
- What astonishing and awesome testaments to the greatness of God can you observe during the season of fall?

Additional Scripture and Faith-Based Texts:

Ecclesiastes 3:1

For everything there is a season, and a time for every matter under heaven:

Hebrews 13:8

Jesus Christ is the same yesterday and today and forever.

Psalms 24:1

The earth is the Lord's and all that is in it, the world, and those who live in it;



Principles of Indigenous Learning:

- Engagement with the Land, Nature and the Outdoors
- Relationships and Collaboration
- Storytelling – The Power of Story
- Experiential Learning
- Community Involvement

Envision (Minds On)

As fall approaches, we notice the leaves on deciduous trees (maple, birch, aspen, oak, and basswood) beginning to change. This is a great opportunity for you to take your students outside to explore the seasonal changes that occur in Autumn.

Sow (Action)

There are many seasonal changes that occur in Autumn. It is a great opportunity to connect with nature and discover the beauty of Fall.

Go on a nature adventure with your students in your own community. Look for signs that the Environment is changing. What do you notice? What do you see that is different from your summertime outdoor experiences?

- Using their senses have students look for signs that summer is coming to an end (for example: leaves changing colour, temperature changes, bird and animal behaviours).
- Students should be encouraged to take photographs or to record their observations using pictures, words, or brief sentences to share with their peers.
- What are they noticing?

Encourage students to bring in an 'Autumn' artifact (photograph, object, drawing) that has meaning to them and makes them think of 'Fall' to share with their peers during a knowledge building circle.

- What is the personal significance of the artifact they have chosen?
- What does it teach us about the season of Autumn?
- How can we classify or categorize these 'fall' pieces of nature?

Gather fall leaves as a class outside or have students bring in leaves from around their home to share. Using the leaves and other natural materials create works of art that are representative of fall experiences. The Leaf Man by Lois Elhert is a great text to get students thinking about creating illustrations/pieces of art using natural materials from the outdoors.

- What similarities do you notice in the fall leaves that have been collected?
- What differences do you notice in the fall leaves that have been collected?
- How could we sort or organize the leaves that we have collected?
- What could you create using fall leaves and outdoor materials?



Nurture (Consolidation)

Discuss the students' observations from their time together outdoors as a community of learners.

- What are some of the changes that we noticed during our time outdoors?
- How do we know that summer is leaving, and Autumn is coming?
- How does the weather change in the fall?
- Why does the weather change in the fall?
- How does the changing of the weather affect humans, plants and animals?
- Do all leaves change colour in the fall?
- Why do some leaves change colour and others do not?
- What makes the leaves change colour?
- How can we classify and organize the leaves that change colour?
- Discuss with a community partner the changing of the seasons and the role of Mother Nature in seasonal changes. What traditional stories can the community partner share about the changing of the seasons? What teachings does Autumn present to us that are different from other seasons?
- How would students best like to share their experiences and understanding of the importance of the changes for all living things that occur in Autumn (photographs, pic-collage, illustrations, written responses, oral stories shared, poems, songs, video, art created using pastels, and/or art created from fall artifacts)?

Curriculum Connections

Religious Education

(Ontario Catholic Elementary Curriculum Policy Document Grades 1-8; 2012 Assembly of Catholic Bishops of Ontario)

Hope Expectations: Living in Solidarity (Grade 1, 2, 3)

Students will appreciate all of creation as a gift and actively fulfill their responsibility to be stewards of God's creation and acknowledge all life as sacred.

Kindergarten

(Ontario Catholic Elementary Curriculum Policy Document – Kindergarten – draft 2019)

Believing - BL 1.2

Students will investigate and explore God's creative world through their everyday interactions with nature and make connections to God as Creator.

Celebrating – CL 3.1

Share personal stories of family gatherings and celebrations

Living a Moral Life – ML 1.3

Come to know who God is through relationships and interactions with their environment

Living in Communion – LC 1.2

Develop an understanding that we belong in a faith community at the centre which is a loving God



Living in Solidarity – LS 2.3

Come to understand that it is our responsibility to be stewards of all the God created

Praying – PR 1.2

Become aware that prayer is different from other class activities

Grade 1

Believing – BL3.3

Compare how families and communities are formed and defined by their common history and stories

Celebrating- CL3.3

Identify the various ways in people communicate with each other and express their thoughts and feelings

Living a Moral Life – ML3

Demonstrate an understanding that as human beings God calls us to grow in holiness

Living in Communion – LC2.2

Describe what it means to belong to God's family and the community of the Church

Living in Solidarity – LS.2

Understand that as human beings made in God's image, we are social by nature and are called both as individuals and as a community to offer friendship and charity to all people

Praying – PR.1.1

Understand that prayer is essential to having a relationship with God, with Christ and with one another

Grade 2

Believing - BL3.3

Compare how common shared experiences help to shape families and communities

Celebrating – CL1.3

Identify ways in which we encounter the presence of God

Living a Moral life – ML 3.2

Identify how we receive grace from God and identify ways we can the gift of Grace to help others and build up the Church

Living in Communion – LC2.3

Describe how our families remember ancestors

Living in Solidarity – LS2.3

Identify ways we can express to God that we respect the gift of our 'human dignity' and show respect toward others through our prayers and actions

Praying – PR2.2

Identify that our prayer as Christians should include the needs of other people, the Church, social/environmental issues in our world and how we offer spontaneous prayers of petition for them in our individual and communal prayers

Grade 3

Believing – B3.2

Give examples of how the Church, like a sacrament makes Christ present through its witness



Celebrating- C.3

Compare the way we celebrate special occasions and milestones to remember important personal and family history

Living a Moral Life- ML1

Demonstrate an understanding how God teaches us to be good and to reflect this goodness in our actions

Living in Communion – LC2.2

Identify how the Holy Spirit keeps the presence of Jesus alive in the Church for those who work for unity, justice and peace

Living in Solidarity – LS1

Understand that the Holy Spirit assists us to develop and strengthen our relationship with Jesus and one another through our participation in society

Praying – PR 2.3

Demonstrate an understanding of the importance of the Holy Spirit in guiding us as we learn how to pray as Jesus taught us

Kindergarten – Overall Expectations

(The Kindergarten Program, Ministry of Education, 2016)

OE 1 - Communicate with others in a variety of ways, for a variety of purposes, and in a variety of contexts

OE 10 – Demonstrate literacy behaviours that enable beginning writers to communicate with others

OE 13- Use the processes and skills of an inquiry stance

OE 14 - Demonstrate an awareness of the natural and built environment through hands-on investigations, observations, questions, and representations of their findings

OE 19 – Collect, organize, display, and interpret data to solve problems and to communicate information, and explore the concept of probability in everyday contexts

OE 22 – Communicate their thoughts and feelings, and their theories and ideas, through various art forms

OE 23- Use problem-solving strategies, on their own and with others, when experimenting with the skills, materials, processes, and techniques used in drama, dance, music, and visual arts

OE 28 – Demonstrate an awareness of their surroundings

OE 29 – Demonstrate an understanding of the natural world and the need to care for and respect the environment

OE 30- Demonstrate an awareness of themselves as dramatists, actors, dancers, artists, and musicians through engagement in various activities in the arts

Language (Ministry of Education -The Ontario Curriculum - 2006)

Oral Communication - Grade 1, 2, and 3

Listening to Understand

1.2 - Demonstrate an understanding of appropriate listening behaviour by using active listening strategies

Speaking to Communicate

2.2 - Demonstrate an understanding of appropriate speaking behaviour in a variety of situations

Writing - Grade 1, 2, and 3

Developing and Organizing Content

1.1 Identify the topic, purpose, audience and form for writing

1.2 Generate ideas about a potential topic, using a variety of strategies and resources



1.2 Gather information to support ideas for writing in a variety of ways and/or from a variety of sources

The Arts (Ministry of Education – The Ontario Curriculum – 2009)

Visual Arts - Creating and Presenting

D1.3 Use elements of design in art works to communicate ideas, messages, and understandings (Grade 1, 2, and 3)

Grade 1

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by personal experiences

Grade 2

D1.1 Create two-and three-dimensional works of art that express feelings and ideas inspired by activities in their community or observations of nature.

Grade 3

D1.1 Create two-and three-dimensional works of art that express personal feelings and ideas inspired by the environment...

Drama- Creating and Presenting

B1.4 Communicate feelings and ideas to a familiar audience
(Grade 1, 2, and 3)

Mathematics (Ministry of Education – The Ontario Curriculum - 2005)

Data Management and Probability

Grade 1

- Collect and organize categorial primary data and display the data using concrete graphs, pictographs...
- Read and describe the primary data presented in concrete graphs and pictographs

Grade 2

- Collect and organize categorial or discrete primary data and display the data, using tally charts, concrete graphs, pictographs

Grade 3

- Collect and organize categorial or discrete primary data and display the data using charts and graphs

Science (Ministry of Education – The Ontario Curriculum – 2007)

Grade 1

Understanding Life Systems – Needs and Characteristics of Living Things

3.5 Describe how showing care and respect for all living things helps to maintain a healthy environment

Understanding Earth and Space Systems – Daily and Seasonal Changes

1.1 Assess the impact of daily and seasonal changes on human outdoor activities

Grade 2

Understanding Life Systems- Growth and Changes in animals

3.2 Describe an adaptation as a characteristic body part, shape, or behaviour that helps a plant or animal survive in its environment



Grade 3

Understanding Life systems – Growth and Changes in Plants

1.1 Assess ways in which plants are important to humans and other living things

Social Studies (Ministry of Education - The Ontario Curriculum 2013)

Grade 1

People and Environments: The Local Community

B2.1 Formulate questions to guide investigations into some aspects of the interrelationship between people and the natural and built features in their community...

Grade 2

People and Environments: Global Communities

B1.3 Demonstrate an understanding of the importance of sustainability in people's interrelationship with their natural environment

Grade 3

People and Environments: Living and Working in Ontario

B2.4 Interpret and analyse information and data relevant to their investigations, using a variety of tools

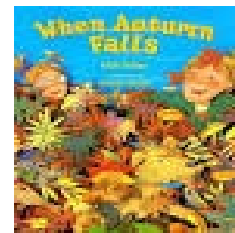
Mentor Text Connections

When Autumn Falls

By: Kelli Nidey

This colourful text helps students to learn about the 'new' season of fall and all the changes that occur in our Environment.

<https://www.goodreads>



Goodbye Summer- Hello Autumn

By: Kenard Pak

As a young girl walks through the forest she encounters a new kind of beauty that comes through seeing the changes that are occurring as the animals and plants begin to prepare for winter.

<https://www.amazon.ca/Goodbye-Summer-HelloAutumn>



Why do leaves change colour?

By: Betsy Maestro

This book explores the transition that occurs as leaves grow, change and die as a result of the changes in temperature that occurs with seasonal changes. There is a rich vocabulary and lots of connections to the scientific process involving 'chlorophyll'.

<https://www.goodreads>



Additional Resources:

Leaf Man

By: Lois Ehlert

As Fall approaches the 'leaf man' sets out on an adventure created for him by the wind. The wind blows and sends him on a path that is rich in visual representations of what a leaf could become. This is a great book to inspire students to create their own 'leaf character' using leaves from their own communities.

<https://goodreads.com>

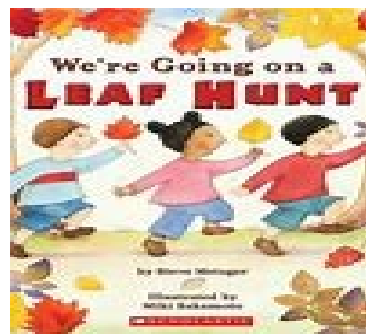


We're Going on a Leaf Hunt

By: Steve Metzger

This read aloud provides students with the opportunity to act out their own fall walk as they envision themselves 'going on a leaf hunt' in their own community.

<https://www.goodreads.com>



Autumn Leaves are Falling Down – The Learning Station - Song

This is a fun song that you and your students can add to which you can add your own actions.

<https://www.youtube.com/watch?v=tPm7JTGIHcA>

Why do leaves change color in the fall?

This is a great video to explain the process that occurs when leaves changing colour as a result of temperature change and the loss of chlorophyll.

<https://www.youtube.com/watch?v=Xk4-6II8I5Q>

With All I Am for You Lord

By: Hillsong

This is an inspirational song with autumn visuals that reminds us of God's love – all the time.

<https://www.youtube.com/watch>



The Beauty of Darkness and Light

Junior – Winter

Psalm 18:28

For it is you who light my lamp; the Lord my God
lightens my darkness.



Catholic Graduate Expectation(s) in Action:

I am a Team Player - I work hard in school so that I can build my community and make it a better place.

I am a believer - I believe that God is with us always.

I Care - I care about and respect God's creation and everything in it.

Faith Connections:

Let There Be Light!

Consider the following passage:

Genesis 1:3-4

Then God said, "Let there be light"; and there was light. And God saw that the light was good; and God separated the light from the darkness.

- Why do you think God decided there needed to be light?
- Why do you think that God thought light was good? What are the good things about having light?
- How is light for our world created?
- What are the benefits of sunshine?
- What are some of the good things about darkness?
- Investigate the relationship between light and dark and the four seasons. What conclusions can you make about light and dark during the summer months compared to the winter months? How do these relationships impact the earth and our perspectives of it, the seasons, light and dark?
- Why do you think that darkness is often associated with feelings of loneliness, sorrow, and depression?

You Are the Light of the World

Consider the parable "Salt and Light":

Matthew 5:14-16

You are the light of the world. A city built on a hill cannot be hid. No one after lighting a lamp puts it under the bushel basket, but on the lampstand, and it gives light to all in the house. In the same way, let your light shine before others, so that they may see your good works and give glory to your Father in heaven.



(See also Mark 4:21-25, Luke 8:16-18, and Luke 11:33-36).

- What do you think Jesus is trying to teach us with the telling of this parable? Discuss each of the lines in the parable. What is the meaning behind each statement Jesus makes?
- Why is it important to “let our light shine for others”? What is the impact of letting our light shine?
- How is acting like a light similar to what the sun does for the earth?
- In what ways can we act as a light in the world and for others?

Additional Scripture Passages and Faith-Based Texts to Consider:

John 1:5

The light shines in the darkness, and the darkness did not overcome it.

John 8:12

Again Jesus spoke to them, saying, “I am the light of the world. Whoever follows me will never walk in darkness but will have the light of life.”

Luke 11:34

Your eye is the lamp of your body. If your eye is healthy, your whole body is full of light; but if it is not healthy, your body is full of darkness.

Principles of Indigenous Learning:

- Engage with the Land, Nature, and the Outdoors
- Experiential Learning
- Storytelling/The Power of Story

Envision (Minds On)

Materials

- Warm clothes for the outdoors.
- Digital projector and screen.
- Devices to take digital photos - cameras or mobile devices (1 per group)

Before the lesson, organize students into groups of two.

Begin the lesson inside watching either [This Little Light of Mine by Addison Road](#), or the [Legend of the Northern Lights](#). You could also choose to bring the students outdoors and listen to the audio of either the song or a story if you have access to a speaker.



After the students have seen/heard either the story or the song, tell them:

“We see and feel God’s light everywhere! Remember, it was the star of Bethlehem that guided the shepherds and the magi to Jesus. Jesus is our light, and we try to follow him just like other people throughout history have followed in his footsteps.”

“Today we are going to look for God’s light in two ways: We are going to explore the nature around us, and see where we can find beauty in the winter, and second we are going to take pictures of each other and try to answer the question: “How can I be a light to others?”

Sow (Action)

Show the students the slide-deck called [Photography 101](#). The slide-deck itself could be one hour of instruction, or you can pick and choose the concepts you want the students to focus on.

Assign groups, and camera devices. Write the learning goals for the outdoor lesson:

- ☐ Find light in nature by taking a picture of something beautiful or eye-catching during the winter.
- ☐ Take a picture that shows how you can be a light to others.

Example Goal 1:



Image by Jörg Peter from Pixabay

Example Goal 2:



Image by Claude Mondestin from Pixabay

“When you photograph people in color, you photograph their clothes. But when you photograph people in black and white, you photograph their souls!” - Ted Grant

Have students take a photo using first a colour filter and then using a black and white filter. Compare the photos while reflecting on Grant’s quote. Which photo do you prefer and why? Which photo do you feel is most effective in communicating what you tried to capture in taking the photo and why? Which photo do others like and why? In comparing the two photos, do you agree with Grant’s quote?

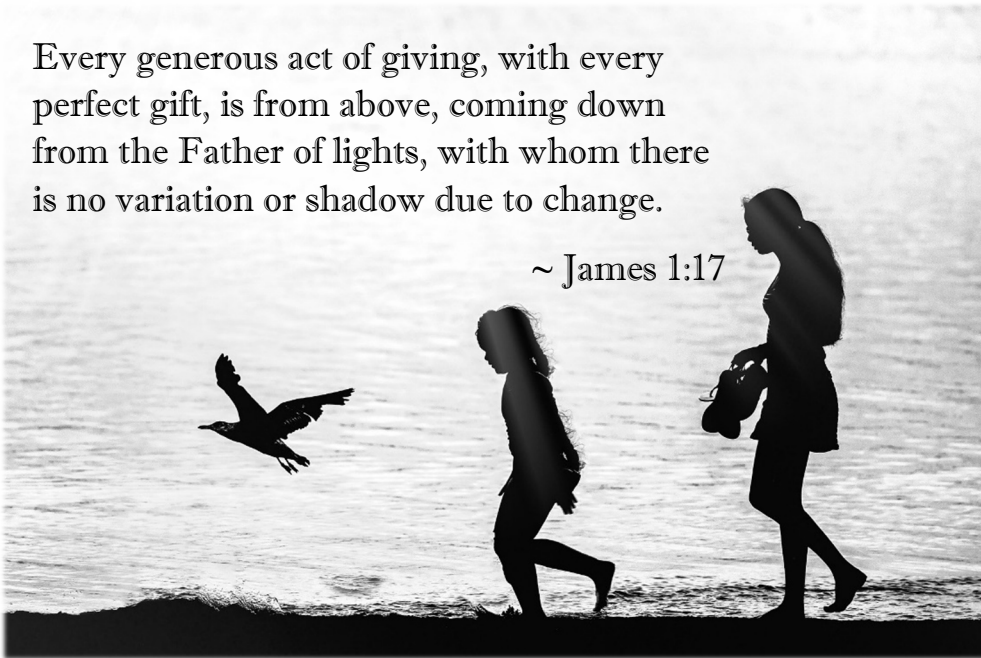


Encourage students to take many different photos of both where they see light in nature, and pictures of themselves in nature.

Nurture (Consolidation)

Every generous act of giving, with every perfect gift, is from above, coming down from the Father of lights, with whom there is no variation or shadow due to change.

~ James 1:17



Option 1 - Have students use their digital images to create inspirational or religious pieces of multimedia art. Make use of apps or software that allows students to add text, and have students research scripture on God as light, being a light, or explaining how they are or are going to be lights to others around them.

Option 2 - If there is freshly fallen snow, share the story of Footprints with your students:

*One night I dreamed I was walking along the beach with the Lord.
Many scenes from my life flashed across the sky.
In each scene I noticed footprints in the sand.
Sometimes there were two sets of footprints,
other times there were one set of footprints.
This bothered me because I noticed
that during the low periods of my life,
when I was suffering from
anguish, sorrow or defeat,
I could see only one set of footprints.
So I said to the Lord,*



*"You promised me Lord,
that if I followed you,
you would walk with me always.*

*But I have noticed that during the most trying periods of my life
there have only been one set of footprints in the sand.*

Why, when I needed you most, you have not been there for me?"

The Lord replied,

"The times when you have seen only one set of footprints in the sand, is when I carried you."

Challenge the students to create a winter version of the story using the fresh snow as a canvas to take digital pictures of two footprints and then one set of footprints going off in the distance.

Curriculum Connections

OE= Overall Expectation, SE = Specific Expectation

Click on link to go to the specific curriculum page for that subject and grade.

Religion:

ML3: Demonstrate an understanding of the important personal responsibility that each person has to form their moral conscience as a sign of Christian maturity and a commitment to the call to holiness.

LS1: Understand that each person is responsible for participation in society, to discern, to freely choose their vocation and to make a contribution in the world.

Science:

Grade 4: Light

2.5: use scientific inquiry/research skills (see page 15) to investigate applications of the properties of light or sound

3.1: identify a variety of natural light sources (e.g., the sun, a firefly) and artificial light sources (e.g., a candle, fireworks, a light bulb)

3.2: distinguish between objects that emit their own light (e.g., stars, candles, light bulbs) and those that reflect light from other sources (e.g., the moon, safety reflectors, minerals)

3.8: identify devices that make use of the properties of light and sound

Arts

Grade 4

Apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings; **Visual Arts OE 1, SE 1.1, 1.2, 1.3, 1.4**



Grade 5

Apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings; **Visual Arts OE 1, SE 1.1, 1.2, 1.3, 1.4**

Grade 6

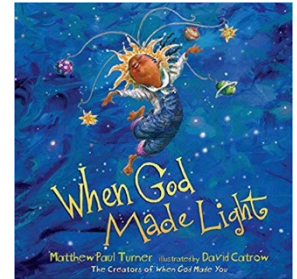
Apply the creative process to produce art works in a variety of traditional two- and three-dimensional forms, as well as multimedia art works that communicate feelings, ideas, and understandings, using elements, principles, and techniques of visual arts as well as current media technologies; **Visual Arts OE 1, SE 1.1, 1.2, 1.3, 1.4**

Mentor Text Connections

When God Made Light

By: Matthew Paul Turner

When God Made Light is a beautifully illustrated book on the miracles that God's love and light has created, and how everyone of us carries God's light with us.



Additional Resources:

[A Legend of the Northern Lights](https://www.youtube.com/watch?v=ljLbeISADzo) - <https://www.youtube.com/watch?v=ljLbeISADzo>

[Addison Road - This Little Light of Mine](https://www.youtube.com/watch?v=li2THk_yR3Q) - https://www.youtube.com/watch?v=li2THk_yR3Q



Snow, Ice and Adapting to Cold – Building Structures

Junior – Winter

Beauty of Winter

God of creation, thank you for the beauty of winter- for snow, icy windowpanes, evergreen trees, warm coats, sledding, and hot cocoa. Let us enjoy Your creation in all its glory, this winter and always.

- Author Unknown

<https://www.xavier.edu/jesuitresource/online-resources/prayer-index/winter-prayers>



Catholic Graduate Expectation(s) in Action:

- I believe that God is an awesome God
- I have thoughts and opinions that matter
- I solve problems with knowledge, understanding and prayer
- I use my gifts and talents given to me by God
- I always do my best
- I co-operate with others in all that I do
- I value everyone's work
- I respect and listen to others
- I think of others before myself

Faith Connections:

Hibernation and Meditation

For many animals, winter is a time for hibernation. Hibernation helps these animals survive in the roughest and toughest conditions. Hibernation is a process of lowering an animal's body temperature and slowing down its heartbeat in order to conserve energy during times of scarcity and stress.

- Find out about some examples of animals who hibernate during the winter months (eg. Black bear). How do the animals prepare to hibernate and what is the hibernation experience like for each of the animals researched?

Meditation is a process that involves relaxing the body and quieting the mind. People meditate for different reasons: to feel calm, to diminish stress or pain, to get through a crisis, or to engage in a spiritual practice. Meditation is a reflective practice that can help to reduce anxiety, help with insomnia and improve longevity.



- Considering hibernation, how might it compare to the practice of meditation?

Christian meditation is a form of prayer, in which moments of quiet focus are spent contemplating our faith. Introduce the practice of Christian meditation to your students and begin to engage in the practice daily with your students.

- What is the impact of meditation on your students? What do they notice? What do you notice?

NOTE: For information about Christian Meditation, see: [*An Introduction to Christian Meditation for Students*](#), from the Institute for Catholic Education, written by Paul Tratnyek, 2016.

Additional Scripture Passages and Faith-Based Texts to Consider:

Job 37:6-10

For to the snow he says, 'Fall on the earth'; and the shower of rain, his heavy shower of rain, serves as a sign on everyone's hand, so that all whom he has made may know it. Then the animals go into their lairs and remain in their dens. From its chamber comes the whirlwind, and cold from the scattering winds. By the breath of God ice is given, and the broad waters are frozen fast.

Genesis 8:22

As long as the earth endures, seedtime and harvest, cold and heat, summer and winter, day and night, shall not cease."

Beauty of Winter

God of creation, thank you for the beauty of winter- for snow, icy windowpanes, evergreen trees, warm coats, sledding, and hot cocoa. Let us enjoy Your creation in all its glory, this winter and always.

- *Author Unknown*

<https://www.xavier.edu/jesuitresource/online-resources/prayer-index/winter-prayers>

Principles of Indigenous Learning:

- Engagement with the Land, Nature and the Outdoors
- Storytelling/The Power of Story
- Experiential Learning
- Local focus

Envision (Minds On)

Winter is a time when animals, plants, and humans must adapt to the cold weather and climate. In this lesson, we will explore how humans, and some animals adapt so that they survive the cold winter months.



Begin a discussion with students using the following questions (record answers in a web organizer):

- How do humans keep warm in the winter?
- How do animals keep warm?
- If you had to survive outdoors, in the winter, how could you stay warm? (make connections to ideas presented in the read aloud Hatchet)

Sow (Action)

**This activity is best completed following freshly fallen snow (at least 15 cm of snow). You can complete this activity in the schoolyard, at a local park or in a nearby forest. If in a forest, you could provide other options for building structures using natural materials. You will need to find a location that can be visited twice (about 1-2 hours apart) in one day.*

**Please ensure that students are dressed appropriately for this activity.*

**Please obtain administrator approval to complete this activity with your students as there are additional elements of risk involved outside of regular outdoor excursions.*

- Divide the class into groups of 4-5. Tell them that they will be learning about one way to stay warm in the winter – building a Quinzhee. Explain to them that each group will be working together to build the structure. [If helpful, show the students the video describing Quinzhee buildings beforehand so that they have an idea on how to build it \(see additional resources\).](#) Otherwise, give the instructions in the field.
- Set up the expectations for teamwork by highlighting the following Catholic Graduate Expectations:
 - I co-operate with others in all that I do
 - I value everyone's work
 - I respect and listen to others
- Provide each group with enough shovels and sleds to collect and pile snow. Sleds work well to collect snow from further distances.
- Take students to the designated area in the morning.
- Groups need to work together to pile snow. The pile should be approximately 1.5m-2m high about 1.5m-2m wider than the width of the group shoulder-to-shoulder (Students can try to figure this out. Students lie shoulder to shoulder in the snow and can then mark the circular perimeter – the circumference - about 0.5m wider.) Once complete, the snow pile should look conical.
- The piles of snow need to set and settle for about an hour, depending on the temperature. If dug too soon, the snow will collapse.
- Now for the fun part! After lunch, return to the piles of snow with sleds and shovels. As a team, students need to dig out the pile.
 - To make sure that the walls are thick enough to be safe, have students push 30 cm wooden rulers into the base of the piles, parallel to the ground. Once students begin digging, they will encounter the end of the rulers on the inside. This indicates that the appropriate thickness has been reached.
 - Using the sled to pull out snow from the entrance is also helpful.
 - Excavate enough snow so that the entire group can lie down inside.
 - Small holes should be dug through the wall to facilitate circulation.



- Once all students have completed, have groups tour each quinzhee. Highlight success and challenges.

Nurture (Consolidation)

Upon return to the classroom, discuss the following:

- What was the best part of building your structure?
- What were some challenges you faced?
- What did you notice about your own personal body temperature as you built the quinzhee?
- How did your group work together to accomplish this task?

Math

In order to highlight the benefits of quinzhees, have students compare the temperatures outside and inside the quinzhees. Students can create a table and subsequent graph comparing the temperature changes over time. Furthermore, students can compare temperatures by increasing/decreasing the number of people inside each structure.

Science

Discuss the structural stability of the quinzhees. Learn about the forces acting on the structure. Students can explore the characteristics of snow and its insulating characteristics.

Language Arts

Write instruction manuals on how to build a Quinzhee.

Extension Activities

- Research and report on animal adaptations (physical and behavioural) to survive in the winter.
- Research, compare, and report on traditional clothing and housing of indigenous groups and settlers. Compare these to present-day practices and technologies. *Note: Quinzhees are not traditional Indigenous structures - highlight this difference by teaching students about igloos, a traditional Inuit structure.
- Research and build other structures that can help them survive outdoors in the winter or other seasons.
- Research and report on wilderness survival skills.

Curriculum Connections

Family Life

Grade 4

E2.1 recognize and appreciate the importance of being good caretakers of the physical environment

E3.2 identify some of the ways that people can care for the physical environment

Grade 5

D2.1 recognize and appreciate that actions have consequences for ourselves and others

D3.1 identify some reasons why we avoid accepting responsibility for our actions



E1.1 recognize and appreciate the importance of using their gifts to make the world a better place for everyone

Grade 6

E2.2 recognize that they are part of the world and have a responsibility to be a positive influence on the natural environment

E3.3 describe some ways in which they can be good stewards of the natural environment

Math

Grade 4: Measurement

- estimate, measure (i.e., using an analogue clock), and represent time intervals to the nearest minute;
- estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in five-minute intervals, hours, days, weeks, months, or years

Grade 5 Measurement

- estimate, measure, and record ... temperature change, and elapsed time, using a variety of strategies

Grade 4, 5, 6: Data Management and Probability– Overall Expectations.

- collect and organize discrete primary data and display the data using charts and graphs.
- read, describe, and interpret primary data and secondary data presented in charts and graphs, (*and sets of data - Gr. 6*)

Health and Physical Education – Active Living Grades 4, 5, & 6

A1. participate actively and regularly in a wide variety of physical activities...;

A2. demonstrate an understanding of the importance of being physically active, and apply physical fitness concepts and practices that contribute to healthy, active living;

A3. demonstrate responsibility for their own safety and the safety of others as they participate in physical activities;

Science

Grade 5 UNDERSTANDING STRUCTURES AND MECHANISMS - FORCES ACTING ON STRUCTURES AND MECHANISMS

OE 2. investigate forces that act on structures and mechanisms;

OE 3. identify forces that act on and within structures and mechanisms and describe the effects of these forces on structures and mechanisms.

UNDERSTANDING MATTER AND ENERGY PROPERTIES OF AND CHANGES IN MATTER

SE 2.2 measure temperature and mass, using appropriate instruments

Social Studies

Grade 4: A. HERITAGE AND IDENTITY: EARLY SOCIETIES TO 1500 CE

OE A1. Application: compare key aspects of life in a few early societies (to 1500), including at least one First Nation and one Inuit society, each from a different region and era and representing a different culture, and describe some key similarities and differences between these early societies and present-day Canadian society



OE A2. Inquiry: use the social studies inquiry process to investigate ways of life and relationships with the environment in a few early societies (to 1500), including at least one First Nation and one Inuit society, with an emphasis on aspects of the interrelationship between the environment and life in those societies

OE A3. Understanding Context: demonstrate an understanding of key aspects of a few early societies (to 1500), including at least one First Nation and one Inuit society, each from a different region and era and representing a different culture, with reference to their political and social organization, daily life, and relationships with the environment and with each other

Grade 5 A. HERITAGE AND IDENTITY: INTERACTIONS OF INDIGENOUS PEOPLES AND EUROPEANS PRIOR TO 1713, IN WHAT WOULD EVENTUALLY BECOME CANADA

SE A3.7 describe some significant differences among Indigenous peoples and between selected Indigenous and Europeans communities in what would eventually become Canada

Grade 6 A. HERITAGE AND IDENTITY: COMMUNITIES IN CANADA PAST AND PRESENT

SE A3.8 identify key differences, including social, cultural, and/or economic differences, between a few historical and/or contemporary communities, including at least one First Nations, Métis, or Inuit community, in Canada

Language Arts Grade 4, 5, 6 – Overall Expectations

Oral Communication

1. listen in order to understand and respond appropriately in a variety of situations for a variety of purposes;
2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

Reading

1. read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning;

Writing

1. generate, gather, and organize ideas and information to write for an intended purpose and audience;
2. draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;
3. use editing, proofreading, and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present their work effectively;

Media Literacy

1. create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;



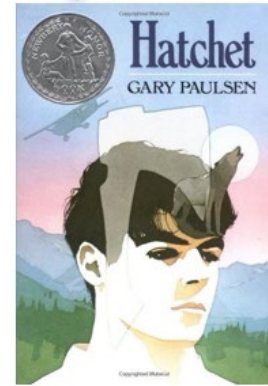
Mentor Text Connections

Hatchet by Gary Paulsen

Thirteen-year-old Brian Robeson, haunted by his secret knowledge of his mother's infidelity, is traveling by single-engine plane to visit his father for the first time since the divorce. When the plane crashes, killing the pilot, the sole survivor is Brian. He is alone in the Canadian wilderness with nothing but his clothing, a tattered windbreaker, and the hatchet his mother had given him as a present.

At first consumed by despair and self-pity, Brian slowly learns survival skills—how to make a shelter for himself, how to hunt and fish and forage for food, how to make a fire—and even finds the courage to start over from scratch when a tornado ravages his campsite. When Brian is finally rescued after fifty-four days in the wild, he emerges from his ordeal with new patience and maturity, and a greater understanding of himself and his parents.

https://www.amazon.ca/Hatchet-Gary-Paulsen/dp/1416936475/ref=sr_1_1?keywords=hatchet+book&qid=1563980952&s=gateway&sr=8-1

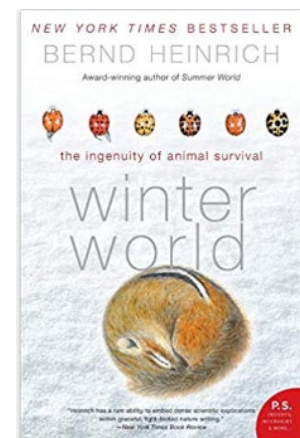


Winter World: The Ingenuity of Animal Survival by Bernd Heinrich

From flying squirrels to grizzly bears, torpid turtles to insects with antifreeze, the animal kingdom relies on some staggering evolutionary innovations to survive winter. Unlike their human counterparts, who must alter their environment to accommodate our physical limitations, animals are adaptable to an amazing range of conditions--i.e., radical changes in a creature's physiology take place to match the demands of the environment. Winter provides an especially remarkable situation, because of how drastically it affects the most elemental component of all life: water.

Examining everything from food sources in the extremely barren winter landscape to the chemical composition that allows certain creatures to survive, Heinrich's *Winter World* awakens the largely undiscovered mysteries by which nature sustains herself through the harsh, cruel exigencies of winters.

https://www.goodreads.com/book/show/254705.Winter_World



Additional Resources

Nerding for Nature - The Last Grownup in the Woods

This is a YouTube channel about survival and wilderness adventures



“I am Carley, a teacher, ex-park ranger, and a dedicated nature nerd. I love teaching folks about nature and trying to help them connect to their environment. I also make bad jokes and act a little ridiculous. What can I say? Nature brings out my inner child. I do quite a few videos on plants and things to eat in the wilderness, but also document my adventures (great and small), try out new wilderness skills, and try to share my knowledge of all things nature.”

<https://www.youtube.com/channel/UCuS52O9gRYXNZoLByaGNpjQ>

Her video about building a Quinzhee:

<https://www.youtube.com/watch?v=Me2BC6MZsIY>

At the Winter Sea Ice Camp: Part 1-4

Watch a series of short films about an Inuit family surviving along the Arctic shores.



Part 1: “In this short documentary on the Netsilik Inuit, an Inuit family stop their trek and make camp. It is late winter when the cold is severe. The men cut blocks for an igloo while the women shovel the site. During the day, the men sit patiently on the ice, waiting for seals.”

https://www.nfb.ca/film/at_winter_sea_ice_camp_pt_1/

Raven’s Quest

Raven’s Quest, the fifth series Apartment 11 and TVOkids have co-produced, invites viewers into the lives of 21 Indigenous kid hosts who share their hobbies, customs, and dreams.

<https://www.tvokids.com/school-age/ravens-quest>



Pollination and Stewardship of God's Creations

Junior Division – Spring

Job 12:7-9

But ask the animals, and they will teach you;
the birds of the air, and they will tell you;
ask the plants of the earth, and they will teach you;
and the fish of the sea will declare to you.
Who among all these does not know that the hand of the LORD has done this?



Catholic Graduate Expectation(s) in Action

I care about others and speak up for them.
I solve problems with knowledge, understanding and prayer.
I care about and respect God's creation and everything in it.

Faith Connections:

The Parable of the Mustard Seed:

Mark 4:30-32

He also said, "With what can we compare the kingdom of God, or what parable will we use for it? It is like a mustard seed, which, when sown upon the ground, is the smallest of all the seeds on earth; yet when it is sown it grows up and becomes the greatest of all shrubs, and puts forth large branches, so that the birds of the air can make nests in its shade."

- Why do you think Jesus chooses to compare the kingdom of God to a mustard seed, of all the seeds or plants he could have chosen? Find out about the mustard seed and the mustard plant to make sense of Jesus' comparison.
- How is it that God's kingdom grows and becomes strong? What can you do as an individual, as a class to help in growing and strengthening (pollinating) God's kingdom?
- How might you nurture (pollinate) your own faith, someone else's faith?
- Think about pollination. It is a small action with a big impact. What small actions can you participate in which could have a big impact?



Principles of Indigenous Learning:

- Place-Based Learning/Local Focus
- Experiential Learning
- Engage with the Land, Nature, and the Outdoors
- Differentiation/Flexibility

Envision (Minds On)

NOTE: This lesson works best from mid-May to late June as flowers will be present in the outdoor study areas.

Begin by asking the students, “Why are bees and insects important to us?”

Bee populations have dropped dramatically. “What could happen if they disappear?”

“What can be done to protect pollinating insects and the resources they help to produce?”

Bring the students outside and have them sit or gather around.

Place the fruits and/or vegetables in front of the students and ask,

“Where do you think fruits and vegetables come from?” Students will say plants, and/or trees. As a follow up question, ask students, “Where do plants and trees come from?”

Guide students to see that plants all grow from seeds and that most plants can only produce seeds because of flowers.

Materials Required:

- An outdoor area with two or more different types of flowering plants. Alternatively, potted plants with flowers could be brought as examples.
- Clipboards, plain paper, pencils
- Several types of fruits and vegetables

Safety Considerations:

- Always inform administration before starting outdoor education lessons and bring a walkie talkie/mobile phone for communication and emergencies.
- Remind students to be respectful to all living things and to not touch or bother any insects they may see.
- Ensure that students with anaphylaxis to insect stings have their Epi-pens with them at all times.



Sow (Action)

1. Share with students that many have flowers which help them to create seeds as well as fruits and vegetables that contain seeds.
2. Show the students a flower and carefully touch and identify the **stamen**, the pollen producing part of the flower. Tell them that the **stamen** produces **pollen** which needs to be spread to other similar flowers so that seeds can be created. Ask them the following question: *"Flowers can't move around, so how does the pollen spread from flower to flower?"*
3. Pass out a copy of the pollination observation sheet. Students will look for flowers while the teacher carefully observes them for 10 to 15 minutes to see if they can see how a flower transfers its pollen to other flowers. Ask students to draw a sketch of the flower they are observing and anything they see interacting with it. Remind students to not touch any insects or animals they may see.
4. Gather students and have them share any observations that they thought were interesting. Highlight any observations such as the students saw insects, birds or even the wind interacting with flowers. Ask the students: *"What do you think helps pollinate flowers?"* (Answer: insects and wind)
5. Explain to students that some plants can only be pollinated by pollinators like butterflies and bees and that because of several factors such as pesticides, parasites, and a lack of flower diversity, these pollinators are disappearing. This will result in less food being produced and more people going hungry.
6. Ask students to use their clipboards to jot down their thoughts concerning what can be done around their schools and community to help pollinators. Students can then share their thoughts and ideas in a collaborative talk circle, and/or by presenting their ideas.

Nurture (Consolidation)

Option 1:

Tell the students that because pollinators are disappearing in many parts of the world, some people have resorted to pollinating flowers by hand using a small brush. One of the reasons that pollinators are disappearing is because of the pesticide used on crops. Complete a shared reading with students based on this article:



[Photos of Hand Pollination](#)



Have students create a short public service announcement about the importance of protecting pollinators by reducing the use of fertilizers. Students could then create posters, digital images, audio podcasts, or short videos. A Pollinator PSA Checklist could be used for assessment.

Option 2:

Tell the students that some scientists and governments are researching how to make robot pollinators. Have students take the role of designers and create the perfect pollinator. In their design, they are to label and describe what makes their pollinator so efficient and useful. Students can make drawings of their pollinators or make a three-dimensional sculpture of their super pollinator using plasticine.

Curriculum Connections

OE= Overall Expectation, SE = Specific Expectation

Click on link to go to the specific curriculum page for that subject and grade.

Religion:

The common good and stewardship of creation

Demonstrate an understanding of how the gifts received as human beings invite us to be responsible stewards of creation (i.e. natural world created by God) and to bring about His reign in the human community (i.e. common good of societies and nations of the earth) **LS 2**

Science:

Grade 4: Plants and animals are interdependent and are adapted to meet their needs from the resources available in their particular habitats. **OE 1, 2, 3, SE 1.1, 1.2, 2.1, 2.3, 2.6, 3.4, 3.7, 3.10**

Grade 5: Choices about using resources have both immediate and long-term impacts. **OE 1, SE 1.1, 2.1, 2.2, 2.5**

Grade 6: Because all living things are connected, maintaining diversity is critical to the health of the planet. **OE 1, 3, SE 1.1, 1.2, 2.1, 2.2, 2.3, 3.5, 3.6, 3.7**

Language - Media:

Grade 4, Grade 5, Grade 6: Create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques; **OE 3, SE 3.1, 3.2, 3.4**



Mentor Text Connections

Flowers Are Calling

By: Rita Gray

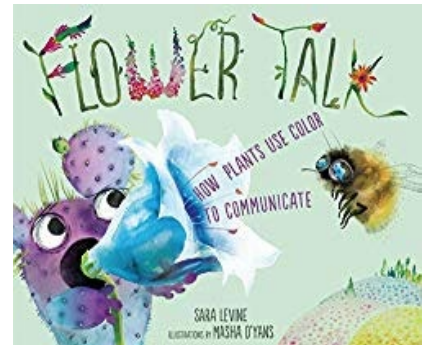
A beautifully illustrated book about different kinds of pollinators. It's simple enough for young children to understand, and it shows that not just bees have a relationship with flowers!



Flower Talk: How Plants Use Color to Communicate

By: Sara C. Levine

A book that explains how plants use different tools, such as colour and shape to attract different pollinators. The information is conveyed in a lighthearted manner by the purple cactus plant on the cover.



Additional Resources:

[Pollination and You](#) - A teaching unit on the interactions between human, nature and pollinators.



Name: _____

Protecting Pollinators Public Service Announcement (PSA) Checklist

- ☐ The issue of protecting pollinators is clearly stated
- ☐ Facts and expert opinion are used to support the PSA
- ☐ One or more causes of disappearing pollinators is described in detail.
- ☐ An effective strategy for helping (ie. planting wildflowers) to help pollinators is communicated.
- ☐ The PSA is interesting and gets the attention of the intended audience.
- ☐ The PSA stays on topic.
- ☐ Work is organized and easy to understand either on paper, audio and/or video form.
- ☐ There are effective uses of diagrams, graphics or other visuals.
- ☐ The PSA is able to generate an emotional response from the audience (i.e. the effects of world-wide chocolate shortages because of the disappearance of cacao plant pollinators).



Name: _____

Super Pollinator Design Checklist

- ☐ At least two characteristics that make it an efficient pollinator
- ☐ Pollinator is labelled correctly and neatly
- ☐ Illustration or sculpture is detailed and organized
- ☐ Effective use of colour and texture to make the pollinator more realistic.
- ☐ Short persuasive text explaining why the pollinator's design should be chosen



Making Change - Protecting Our Shorelines

Junior – Spring

Psalm 24:1-2

The earth is the LORD'S, and all it contains, the world, and those who dwell in it. For He has founded it upon the seas and established it upon the rivers.



Catholic Graduate Expectation(s) in Action:

- I care about and respect God's creation and everything in it
- I stand up for what is right
- I respect and protect the world and all that is in it
- Because I accept my responsibilities, I can make a difference, and will live my life like Jesus.

Faith Connections:

Wisdom to Care for the Earth

Lord, grant us the wisdom to care for the earth and till it. Help us to act now for the good of future generations and all your creatures.

Help us to become instruments of a new creation,
Founded on the covenant of your love.

- The Cry of the Earth

<https://www.xavier.edu/jesuitresource/online-resources/prayer-index/sustainability-prayers>

Genesis 1:26-28

Then God said, "Let us make humankind in our image, according to our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals of the earth, and over every creeping thing that creeps upon the earth." So God created humankind in his image, in the image of God he created them; male and female he created them.

God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth."



Principles of Indigenous Learning:

- Engagement with the Land, Nature, and the Outdoors
- Storytelling/Power of Story
- Experiential Learning
- Place-based/Local Focus

Envision (Minds On)

As the winter snow melts and the lakes and rivers thaw, the shorelines become vibrant places for new growth; but they also become collecting grounds for waste, particularly plastic trash. This is a good time to initiate a spring cleanup along your local wetlands.

- Ask students to share experiences about shorelines they have visited or live near.
- Ask students to make a list of all living and non-living elements that one might see/find along a local shoreline (i.e. Lake Ontario, Ottawa River, the St Lawrence River etc.)
- Bring out the idea that lots of waste ends up along shorelines due to the nature of water (all rivers, streams, and ponds collect elements from the land after a thaw, as the water “makes its way to the sea”).
- Have students make predictions about what they think will be the most common item(s) found if one were to collect trash along the shoreline. Elicit responses by asking:
 - What types of trash might we find along the shore? Why might this be?
 - What types of trash do people often throw away?
 - Why is it problematic for trash to accumulate along shorelines?

Sow (Action)

Prepare a class walk along a local shoreline:

- Divide students into groups of 5-6 (if possible, assign an adult supervisor to each group, for safety purposes).
- Provide each group with the following:
 - i. Work gloves
 - ii. A garbage bag, a clear bag for recycling, and a container or bag for compost, if applicable in your area.
 - iii. A clipboard and checklist (students can make their own based on their predictions, or they can download one from the following site: <https://www.shorelinecleanup.ca/>)
- As students work in small groups to clean up their designated area of the shoreline, one student should check off the materials collected on a master list (this data will be used later in class to create graphs and to analyze the results of the cleanup)
- Remind students to be safe: they should not pick up anything that looks dangerous (e.g. personal hygiene items, needles, broken glass, etc.) - students should always consult an adult if they are unsure



Nurture (Consolidation)

Upon return to class, discuss the following questions using the data sheets created during the walk:

- How might the amount of garbage collected be determined?
- Are you surprised by the amount and contents of the garbage collected? Why or why not?
- How do the results of your collections compare to the predictions made before going to the shoreline?
- What was the most frequently collected type of trash? Why do you think that is?
- What item found was most unusual?
- What is the potential impact of NOT cleaning up the shoreline given the garbage you collected?
- What lessons can we learn from this experience?
- How can we help reduce this type of waste in our class / school / community / province / country?

Extend the learning:

- Make graphs about the shoreline cleanup! Create a master list of the data collected by each group. Have students create graphs to present the data about the garbage collected. What kind of graph, scale, or presentation communicates the data most clearly and with the most impact? Students should draw conclusions from the data and graphs by writing a short paragraph analyzing the data.
- Explore and discuss statements presented in *Laudato Si* which calls humankind to action against the environment:
 - “How can anyone claim to be building a better future without thinking of the environmental crises and the sufferings of the excluded[?]” (pg. 12)
 - “Everyone’s talents and involvement are needed to redress the damage caused by human abuse of God’s creations.” (pg. 13, quoted from the Southern African Bishop’s Conference, Sept. 1999)
 - “We are a part of nature, included in it and thus in constant interaction with it. Recognizing the reasons why a given area is polluted requires a study of the working of society, its economy, its behaviour patterns, and the ways it grasps reality.” (pg. 104)

What do the statements mean and what are the implications for each of the statements?

What actions can the students come up with in order to take action against water and shoreline pollution? Some suggested ideas include:

- creating videos or posters, or writing letters persuading the school community to reduce the use of one-use plastics.
- creating a school campaign to reduce the school community’s amount of single-use plastics and throw-away containers.
- In response to the following statement in *Laudato Si*, investigate what the local, provincial, and federal governments’ responsibilities are regarding protecting the environment and reducing pollution and write letters to local, provincial and federal members of parliament in order to put pressure on them to address environmental concerns and issues related to water pollution: “Because



the enforcement of laws is at times inadequate due to corruption, public pressure has to be exerted in order to bring about decisive political action” (pg. 131)

- Investigate and research different governmental and non-governmental organizations that you could partner with in order to address water pollution.
- “For the Indigenous people in Canada, there is a reciprocal and unique relationship with water. Indigenous women especially are recognized as having a special role and connection with water. Indigenous women across the country are raising their voices to draw attention not only to water issues faced by the indigenous, but in wider communities as well” (*Water Song: Indigenous Women and Water* in *Solutions*: Volume 7, Issue 6, Page 64-73, November 2016). Visit the following websites to find out more about the Indigenous people’s relationship with water, the Water Song (<https://www.thesolutionsjournal.com/article/water-song-indigenous-women-water/> and <https://www.singthewatersong.com/songlyrics>)

Curriculum Connections

Religious Education

Grade 4

LS2: Focus: the common good and stewardship of creation Demonstrate an understanding of how the gifts received as human beings invite us to be responsible stewards of creation (i.e. natural world created by God) and to bring about His reign in the human community (i.e. common good of societies and nations of the earth).

ML1.3: Identify, using passages from the New Testament, the ways we are called to live the New Commandment (i.e. conversion of heart, developing in our lives an interior law of charity, openness to the grace of the Holy Spirit) in the choices we make, in our relationship with God and others.

Grade 5

ML3.1: Identify and examine a selection of biblical passages to unfold what God revealed about the responsibility of individuals and social institutions to care for the poor and the sick, to be just in what they do.

Grade 6

ML3.1: Locate and examine gospel passages to identify how Jesus called individuals to holiness and guided them in the moral life.

LS1: Understand that each person is responsible for participation in society, to discern, to freely choose their vocation and to make a contribution in the world.

Family Life

Grade 4

E2.1: recognize and appreciate the importance of being good caretakers of the physical environment

E3.1: identify some of the ways that people can care for the physical environment

Grade 5

D2.1: recognize and appreciate that actions have consequences for ourselves and others

D3.1: identify some reasons why we avoid accepting responsibility for our actions



E1.1: recognize and appreciate the importance of using their gifts to make the world a better place for everyone

Grade 6

E2.2: recognize that they are part of the world and have a responsibility to be a positive influence on the natural environment

E3.3: describe some ways in which they can be good stewards of the natural environment

Math – Data Management and Probability

Grade 4, 5, 6 – Overall Expectations

- collect and organize discrete primary data and display the data using charts and graphs.
- read, describe, and interpret primary data and secondary data presented in charts and graphs, (*and sets of data - Gr. 6*).

Science

Grade 4: Habitats and Communities

OE 1: analyse the effects of human activities on habitats and communities;

Grade 5: Properties of and Changes in Matter

OE 1: evaluate the social and environmental impacts of processes used to make everyday products;

Grade 5: Conservation of Energy Resources

OE 1: 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;

Social Studies

Grade 4: People and Environments – Political and Physical Regions of Canada

OE B2: Inquiry: the social studies inquiry process to investigate some issues and challenges associated with balancing human needs/wants and use activities with environmental stewardship in one or more of the political and/or physical regions of Canada

Grade 5: People and Environments – The Role of Government and Responsible Citizenship

OE B1: Application: assess responses of governments in Canada, including First Nations, Métis, and Inuit governments, to some significant issues, and develop plans of action for governments and citizens to address social and environmental issues

OE B2: Inquiry: use the social studies inquiry process to investigate Canadian social and/or environmental issues from various perspectives, including those of Indigenous peoples as well as of the level (or levels) of government responsible for addressing the issues

OE B3: Understanding Context: demonstrate an understanding of the roles and key responsibilities of citizens and of the different levels of government in Canada, including First Nations, Métis, and Inuit governments

Grade 6: People and Environments – Canada's Interactions with the Global Community

OE B1: Application: explain the importance of international cooperation in addressing global issues and evaluate the effectiveness of selected actions by Canada and Canadian citizens in the international arena.

OE B2: Inquiry: use the social studies inquiry process to investigate some global issues of political, social, economic, and/or environmental importance, their impact on the global community, and responses to the issues.



Language Arts Grade 4, 5, 6 – Overall Expectations

Oral Communication

1. listen in order to understand and respond appropriately in a variety of situations for a variety of purposes;
2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

Writing

1. generate, gather, and organize ideas and information to write for an intended purpose and audience;
2. draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;
3. use editing, proofreading, and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present their work effectively;

Media Literacy

2. create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;

Mentor Text Connections

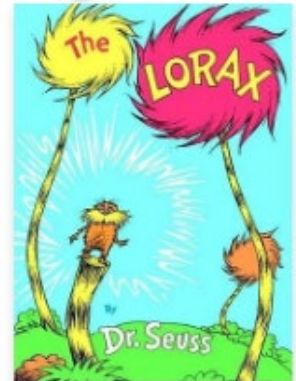
The Lorax

by **Dr. Seuss**

"UNLESS someone like you...cares a whole awful lot...nothing is going to get better...It's not." Long before saving the earth became a global concern, Dr. Seuss, speaking through his character the Lorax, warned against mindless progress and the danger it posed to the earth's natural beauty. His classic cautionary tale is now available in an irresistible mini-edition, perfect for backpack or briefcase, for Arbor Day, Earth Day, and every day.

https://www.goodreads.com/book/show/7784.The_Lorax

A great book to use to stimulate God's call of our collective responsibility for taking care of the earth.



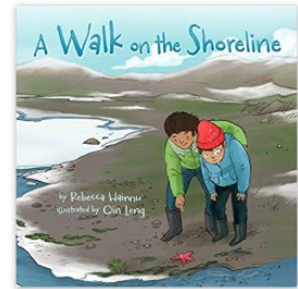
A Walk on the Shoreline

by **Rebecca Hainnu**

Young Nukappia can't wait to get out to his family campsite on the shoreline. After spending all year in the south with his adoptive parents, Nukappia always looks forward to his summer visits with his birth family. After spending one night in town, Nukappia and his uncle Angu begin the long walk down the shore to the family summer campsite, where all of Nukappia's cousins and aunts and uncles are waiting for him. Along the way, Nukappia learns that the shoreline is not just ice and rocks and water.

There is an entire ecosystem of plants and animals that call the shoreline home. From seaweed to clams to char to shore grasses, there is far more to see along the shoreline than Nukappia ever imagined.

<https://www.amazon.ca/Walk-Shoreline-English-Rebecca-Hainnu/dp/1772270245>



Additional Resources

The Great Canadian Shoreline Cleanup

The Great Canadian Shoreline Cleanup is a national conservation program that provides Canadians the opportunity to take action in their communities wherever water meets land, one bit of trash at a time.

There are many resources and lessons available to help lead and initiate a shoreline cleanup in your community.

<https://www.shorelinecleanup.ca/>



Online videos

There are many videos online describing the effects of pollution on our waterways, but here are two that touches on many issues that can be further explored or researched.

Plastic Pollution:

<https://www.youtube.com/watch?v=IA9O9YUbQew&feature=youtu.be>



The Story of Stuff

The Story of Stuff, originally released in December 2007, is a 20-minute, fast-paced, fact-filled look at the underside of our production and consumption patterns. The Story of Stuff exposes the connections between a huge number of environmental and social issues and calls us together to create a more sustainable and just world. It'll teach you something, it'll make you laugh, and it just may change the way you look at all the Stuff in your life forever.



<https://storyofstuff.org/>



Creepy Crawlies

Junior – Summer

Proverbs 30:25

“The ants are not a strong people, but they prepare their food in the summer;”



Catholic Graduate Expectation(s) in Action:

I have Ideas - I have hope for the future

I have Responsibilities - I know that all life is precious

I Care - I care about and respect God’s creation and everything in it

Faith Connections:

The Ant and the Beatitudes

The ant is a small insect, often viewed as a pest that is quickly looked to be rid of when found in your kitchen cupboard or on your picnic blanket. But the ant is one of God’s creations, and it does have many positive, unique qualities. For example, they can lift three times their own body weight and they are very thrifty, never wasting any of their resources (see <https://virtual-kidspace.blogspot.com/2013/07/6-must-know-qualities-of-ants.html> for six interesting characteristics about ants).

Ants are often thought of as small, irrelevant, and inadequate, but we have a lot to learn from the ant. They are referred to in the bible as a “people” because they live and work together in great numbers. The bible says that we can learn from ants as they are wise and work hard to overcome many obstacles in order to gather as much food as possible during fall and spring. This food is necessary for their survival.

The Beatitudes are the beginning verses of Jesus’ Sermon on the Mount from the gospel of Matthew. In his sermon, Jesus identifies several kinds of individuals who he says should feel joy and happiness because they will be rewarded later in some way.

The Beatitudes

Matthew 5:3-12:

Blessed are the poor in spirit, for theirs is the kingdom of heaven.

Blessed are those who mourn, for they will be comforted.

Blessed are the meek, for they will inherit the earth.



Blessed are those who hunger and thirst for righteousness, for they will be filled.

Blessed are the merciful, for they will receive mercy.

Blessed are the pure in heart, for they will see God.

Blessed are the peacemakers, for they will be called children of God.

Blessed are those who are persecuted for righteousness' sake, for theirs is the kingdom of heaven.

Blessed are you when people revile you and persecute you and utter all kinds of evil against you falsely on my account. Rejoice and be glad, for your reward is great in heaven, for in the same way they persecuted the prophets who were before you.

Consider those individuals referenced in The Beatitudes. Why do these individuals often experience hardship or sorrow in their life? Why do you think that Jesus feels these individuals will be rewarded? How might they experience the reward that Jesus promises to them? (For explanation and analysis of each of the beatitudes, see <https://teachingcatholickids.com/the-beatitudes-for-families/> and http://w2.vatican.va/content/francesco/en/messages/youth/documents/papa-francesco_20140121_messaggio-giovani_2014.html).

How does the ant compare to those individuals referenced in The Beatitudes? How might we use the teachings of the ant to help us learn about ourselves and about those around us? How might the teachings of the ant inspire us to treat others with more respect and kindness, to create more opportunities for equality and justice?

Principles of Indigenous Learning:

- Place-Based/Local Focus
- Experiential Learning
- Engage with the Land, Nature, and the Outdoors
- Differentiation/Flexibility

Envision (Minds On)

Safety Considerations:

- Before beginning this lesson, make students aware of animals such as wasps that can sting when threatened and what precautions need to be taken (i.e. keep a respectful distance).
- Identify students with life threatening allergies to insect bites and stings and ensure Epi-pens are with or on the students.

Materials:

- String, ideally cut into 4.5m lengths



- Metre Sticks or measuring tapes
- Sticks or Similar objects (pencils, wood skewers)
- Chalk
- Clipboards
- Pencils
- Copies of Quadrat Tally sheets
- Optional: Magnifying glasses, Specimen Jars

Game- “What Animal Am I?”

The teacher will model the game What Animal Am I? by telling the students that you are thinking of a mystery animal and asking students to guess the animal. You will model this game by telling the students to ask only yes or no type questions. The animal that you will have the students try to guess is an **ant**.

Teacher: I am thinking of an animal that lives in the forest.

Students: Is it a carnivore?

The students will continue to guess until they successfully identify the animal. You will demonstrate how a question such as “What kind of food does it eat?” would not be an appropriate question for this game because it is not answered by “yes” or “no”. If a student asks a question that cannot be answered by “yes” or “no”, remind the student of the rules of asking questions and have the student rephrase the question. This game can continue until the students guess the animal or until you (the teacher) wants to move on to another animal.

For example, using the ant as the mystery animal and the question “Is it a carnivore?”, instead of answering “no”, you could say “this animal is an omnivore.” and thereby avoid confusing students, as most ants are neither pure carnivores, nor pure herbivores.

You may need to guide students to start their questions as broad as possible, and then narrow them down as they progress. Writing down the questions on a board is also a good strategy to help students come up with new questions. Here’s a list of efficient questions, in sequence, that you can use if students get stuck.

- “Does it live on land?”
- “Is it smaller than a mouse?”
- “Is it a vertebrate?”
- “Does it have six legs?”
- “Do they fly?” - Most ants do not, except for the males.
- “Can you find them near or around our school?”
- “Do they live in colonies?”

Hopefully the preceding guided questions will be enough for students to guess “ant”. Share with your students this bit of information:



“Even though it may seem like animals such as rats, pigeons or even humans are the most common, the real winner, if we were to add up the mass of all the members of that species, are ants. There’s over a billion billion ants on Earth! That’s a lot of ants!”

(No doubt some students will ask what’s a billion billion. The answer is a “quintillion”.)

“In fact, most of the animals on the Earth aren’t vertebrates, or animals with skeletons, most animals are invertebrates, or animals with no skeletal structures. Ants are insects, which are a type of invertebrates called arthropods. Today we’re going to explore our schoolyard and nearby nature and record, tally and describe the different types of invertebrates we see”

Optional: [This video on Arthropods](#) , the second link in the resource section, is a good jumping off point to help students classify the different types of invertebrates they may see.



Sow (Action)

Pass out clipboards, tally chart sheets, and sketch paper to students. Bring string, meter sticks, as well as other sticks to use as posts, chalk, specimen jars, and magnifying glasses outside with you. Students will create quadrats – a quadrat is a frame, traditionally square, used in ecology and geography to isolate a standard unit of area for study of the distribution of an item over a large area. Essentially, a quadrat is a square, usually measuring 1mx1m, which is divided into smaller squares to form a grid.



(<https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiC1La4kvvjAhXwY98KHQfSCZoQjhx6BAgBEAI&url=https%3A%2F%2Ftrapman-store.co.uk%2Fproduct%2Fquadrat-100mm-grid%2F&psig=AOvVaw2er0A-k5OPWcrxJUdCs3J8&ust=1565624105803090>)



Have students create quadrats using the string and their sticks so that they measure 1 m on each side and have 90-degree angles at each vertex. Quadrats can all be placed in the same area such as a school field, or you can have students establish their quadrats in different microhabitats such as in the sand or mulch surrounding play structures, on concrete using chalk, or in a more wild space such as a small forested area.

To allow for more detail when collecting data, quadrats can be subdivided every 10 cm to create a perfect 10 by 10 grid. The squares in the quadrat can be labelled like a Battleship board, with numbers as horizontal labels, and letters as vertical labels (e.g. A1, B2, etc.).

As there can be quite a diversity of invertebrates, it may be helpful to provide guidelines for what sort of specimens your students should be looking for. A good idea for Grade 4 is to divide invertebrates into two categories: herbivores and carnivores, and then later use double bar graphs to graph the numbers of each that they find in their quadrats.

Another option could be to compare the number of invertebrates observed in a quadrat located in a wild area of the schoolyard and a quadrat that is placed in a less wild space such as in sand, dirt or even concrete or pavement.

Higher grades can further subdivide their observations into insects, arachnids, and other invertebrates (such as earthworms). Finally, different orders of insects can be studied such as: beetles (coleoptera), flies (diptera), butterflies and moths (lepidoptera), ants, wasps and bees (hymenoptera), grasshoppers (hemiptera).

This activity can be done several times over a period of a few weeks to study the difference in the amount and type of biodiversity found in different quadrats over time.

Students should create field sketches of some of the invertebrates they find and take any relevant notes about what they are observing. Using a small notebook is ideal for keeping this type of log. Alternatively, students could use an electronic device to document and take note of creatures observed in the quadrats.

Nurture (Consolidation)

Science/Art

Option 1: Have students create a realistic labeled diagram of one of the invertebrates that they studied or collected during their quadrat experiments. An excellent tutorial on sketching and the power of feedback is [“Austin’s Butterfly”](#).

Mathematics:

Option 2: Have students use grid paper to explore the concept of bilateral symmetry. Students will use the graph paper and using a reference image or specimen, draw only one side of the invertebrate they have chosen. Students can then use manipulatives such as rulers or Miras to help them accurately reflect their invertebrate image onto the other side of the paper.



For a more measurement rich activity, provide only blank paper and rulers to creating the symmetrical invertebrate.

Option 3: Using the data students collected from their quadrats, have students create graphs either by hand, using a spreadsheet (such as Google Sheets, or Microsoft Excel), or a web app, such as [Create-a-Graph](#). *Grade 4 students can compare data in double line graphs. Grade 5 and 6 students can use broken line and continuous line graphs when plotting changes to invertebrate populations in their quadrats over time. Collecting temperature data can also be helpful to find relationships in their graphs.*

**For students who did not find a specimen to study in their quadrat, have them hypothesize about a specimen they might find given the type of setting studied. For example, it is likely that given the area that their quadrat covered is sandy and grassy that they might have found an ant on another given day. The students can complete Option 1 or 2 using researched information about ants.*

Curriculum Connections

OE= Overall Expectation, SE = Specific Expectation

Click on link to go to the specific curriculum page for that subject and grade.

Religion:

ML3: Demonstrate an understanding of the important personal responsibility that each person has to form their moral conscience as a sign of Christian maturity and a commitment to the call to holiness.

Mathematics

Grade 4

Identify and describe the location of an object, using a grid map, and reflect two-dimensional shapes.

Geometry OE 3, SE 3.1, 3.3

Collect and organize discrete primary data and display the data using charts and graphs, including stem-and-leaf plots and double bar graphs; **Data OE1, SE 1.2, 1.3**

Grade 5

Create and analyse designs by translating and/or reflecting a shape, or shapes, using a variety of tools.

Geometry SE 3.4

Collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including broken-line graphs. **Data OE 1, 1.2, 1.3**

Grade 6

Create and analyse designs made by reflecting, translating, and/or rotating a shape, or shapes, by 90° or 180°.

Geometry SE 3.3



Collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including continuous line graphs. **Data OE 1, SE 1.1, 1.2, 1.4**

Science

Grade 4 - Habitats and Communities

Investigate the interdependence of plants and animals within specific habitats and communities. **OE 2, 2.1, 2.3, 2.5, 2.6**

Grade 6 - Biodiversity

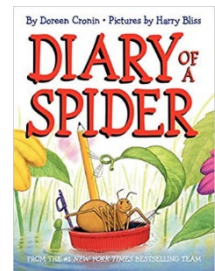
Investigate the characteristics of living things and classify diverse organisms according to specific characteristics. **OE 2, SE 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.7**

Mentor Text Connections

Diary of a Spider, Diary of a Worm, Diary of a Fly

By: Doreen Cronin

These whimsical tales tell the stories of different invertebrates, and the challenges they face in their daily lives. Funny and appealing to readers, these books are wonderful springboards into the characteristics of different invertebrates.



Ultimate Bug-Opedia

By: Darlene Murawski

A comprehensive visual guide filled with stunning photographs and astounding facts about a wide range of invertebrates. Readers of all levels will be able to access the information provided in easy to understand language.



Additional Resources:

Most Numerous Animal on Earth by Mass

<https://www.npr.org/sections/thetwo-way/2011/11/03/141946751/along-with-humans-who-else-is-in-the-7-billion-club>

Arthropods - Smithsonian Museum

<https://www.youtube.com/watch?v=puKog5fzyAg>

Austin's Butterfly

<https://www.youtube.com/watch?v=hqh1MRWZjms>

Create-a-Graph

<https://nces.ed.gov/nceskids/createagraph/>



[illegible]

Symmetrical Insect Checklist

Name: _____

- ☐ I began by drawing only the left (or right) side of my invertebrate.
- ☐ I have reflected my invertebrate across the y-axis (vertical axis).
- ☐ Each intersection of lines on the left side of my invertebrate is the same distance away from the line of reflection as it is on the right side.
- ☐ Features such as wings, legs and antenna begin and end at the same heights on both left and right sides of my invertebrate.
- ☐ My line work is neat and precise.
- ☐ The colours on one side of my invertebrate match the colours on the reflected side exactly.



The Sacredness of Our Water

Junior - Summer

Prayer for Sister Water

We praise and thank You, Lord, for the gift of living water.
Guide us to use it wisely, learn from its humility,
consume it sparingly, and protect its purity,
so that with St. Francis, we may truly enjoy water

Amen.

- by Br. Cathal Duddy ofm

http://praying-nature.com/site_pages.php?section=Eco-Prayers&category_ref=62



Catholic Graduate Expectation(s) in Action:

- I care about others and speak up for them
- I make good choices
- I have hope for the future
- I solve problems with knowledge, understanding and prayer
- I care about and respect God's creation and everything in it
- I respect and protect the world and all that is in it

Faith Connections:

Taking Care of our Water – A Call to Action

Consider the following statements about water and water pollution from *Laudato Si*:

- Pg. 8: "For human beings to contaminate the Earth's waters, its land, its air, its life – these are sins."
- Pg. 24: "Water continues to be wasted...this shows that the problem of water is partly an educational and cultural issue, since there is little awareness of the seriousness of such behaviour with a context of great inequality."

What do these statements mean and what calls to action are implied? What can you as a student do to take up the call to action?

Matthew 28:19-20

Go therefore and make disciples of all nations, baptizing them in the name of the Father and of the Son and of the Holy Spirit, and teaching them to obey everything that I have commanded you. And remember, I am with you always, to the end of the age.



Mark 16:16

The one who believes and is baptized will be saved; but the one who does not believe will be condemned.

Symbolism of Water in Catholic Baptism and Liturgy

During baptism, water symbolizes new birth into the Holy Spirit.

Water plays an important symbolic role in Catholicism. Catholics dip their fingers in holy water before celebrating the Mass, water is poured over a baby's head during the baptism ceremony and priests dip their fingers in holy water before serving the Blessed Sacrament. The use of water in baptism and during the liturgy has a symbolic meaning for Catholics, linking them to the grace and love of God. Water also signifies purification and cleansing.

Baptism

The water used in baptismal ceremonies contains a mixture of olive oil and balsam, together with the "oil of catechumens," usually olive oil that has been blessed by a bishop at a Mass during the Passion Week. Catholics compare the waters of natural birth, which bring a newborn into the world, with the waters of baptism, which bring the believer into a new life with God. Through baptism, Catholics teach that the believer has God living within him and has received the Holy Spirit.

Holy Water

Upon entry into the church, Catholics dip their fingers in holy water, found in a bowl attached to the wall, and make a sign of the cross on themselves. The act is done in preparation for worship and is believed to bring spiritual cleansing. The act also reminds worshipers of the importance of baptism, God's forgiveness, his protection and care, and the gift of eternal life.

Water Mixed with Wine

During Mass, at the time when the Eucharist gifts -- the two elements that will become the body and blood of Christ -- are brought to the altar, the priest makes offertory prayers. The priest pours wine and a few drops of water into the chalice, saying "By the mystery of this water." The water in the chalice represents the water that flowed from Christ's side during the crucifixion; the wine represents his blood. The use of a mixture of water and wine symbolizes the two natures of Christ -- human and divine.

Lavabo

After holding up the chalice and offering a prayer, the priest or deacon washes his hands -- the lavabo -- to prepare to hold the Eucharist. The washing is carried out by a server who pours water over the priest or deacon's hands. The lavabo symbolizes purification and prepares the priest or deacon to offer the sacraments, ending with the prayer, "Pray . . . that my sacrifice and yours may be acceptable to God, the almighty Father."

Source: Symbolism of Water in Catholic Baptism & Liturgy, Trudie Longren; Updated September 29, 2017
<https://classroom.synonym.com/symbolism-of-water-in-catholic-baptism-liturgy-12087374.html>



Sacraments 101: Baptism

<https://bustedhalo.com/video/baptism>

Consider the following bible verses:

Hebrews 10:22

Let us approach with a true heart in full assurance of faith, with our hearts sprinkled clean from an evil conscience and our bodies washed with pure water.

John 4:13-14

Jesus said to her, “Everyone who drinks of this water will be thirsty again, 14 but those who drink of the water that I will give them will never be thirsty. The water that I will give will become in them a spring of water gushing up to eternal life.”

John 3:5

- Explain the significant role that water plays in the sacrament of baptism.
- How is it that being baptized helps us to be “reborn into new life”?
- In being baptized, it is said that we “will never thirst”. What does this mean?
- When baptized, we are committing ourselves to be like Jesus. What does this mean? What are the implications for your life and the way you live it when you commit to be like Jesus?

Principles of Indigenous Learning:

- Engagement with the Land, Nature, and the Outdoors
- Storytelling/The Power of Story
- Experiential Learning
- Place-Based/Local Focus

Envision (Minds On)

The following Minds On can be completed indoors or outdoors, but it would be most impactful to complete the Minds On activity along a local shoreline:

- Show a picture of the Earth or show a globe (an inflatable one is a great resource to have and use outdoors)
- Discuss the following questions:
 - What do you notice?
 - Do you think there is more land or water on earth? Why?
- National Geographic (*Clean Water Crisis Facts and Information* - July 2019) “Freshwater makes up a very small fraction of all water on the planet. While nearly 70 percent of the world is covered by water, only 2.5 percent of it is fresh. The rest is saline and ocean based. Even then, just 1 percent of our freshwater is easily accessible, with much of it trapped in glaciers and snowfields.” What are the implications of this statement?



Sow (Action)

Apple as the Earth **This activity can also be used to further explore fractions, and equivalence of fractions, decimals and percent.*

- Show students an apple. Explain that the apple represents the earth.
- 1. Cut the apple in quarters.
 - Explain that one quarter represents the land. Set this quarter aside.
 - Explain that three quarters represents water.
- 2. Using the three “water” quarters, cut one of these quarters in to four. Set aside three of these pieces (these represent $\frac{3}{32}$) as well as two of the original quarters (half the apple).
 - Explain that all of these represent salt water (found in the oceans, seas, saline lakes and rivers)
 - Explain that the last piece (which represents $\frac{1}{32}$) is all the fresh water in the world. This is equivalent to approximately 3%.
- 3. Cut the remaining skin off the piece of “freshwater”.
 - Explain that the apple flesh represents freshwater that is inaccessible: frozen in glaciers and polar ice caps, too far/deep from human populations or too polluted. Set that aside.
 - Holding the skin, explain that this represents 1%, and is all the freshwater available in the world.

Nurture (Consolidation)

After the activity, discuss the following questions:

- How close were your predictions?
- Is there plenty, or little freshwater in the world? How do you know?
- How do you use water daily?
- Is it important to conserve water? How can you conserve water?
- Where does our drinking water come from?

Creating Water Filters

** For this activity, teachers should consult with administration regarding board protocols for students being near or in water. Some districts require supervisory officer approval.*

Students will create water filters using natural materials found outdoors. Complete this activity near a local shoreline, or even in your school ground. You will need to collect a bucket of dirty water (add debris to tap water or scoop dirty water from a local lake or river water for the activity).

- Divide students into groups of 3-4. Provide each group with the following:
 - A plastic water bottle with the bottom cut off
 - A small bucket of dirty water
 - A receptacle to catch the clean water.
- Explain that the goal of the activity is to create natural water filters to clean and clarify the dirty water. Using only natural materials (stones, gravel, leaves, rocks, sand etc.) and the plastic water bottle, students can create a filter inside the bottle by layering the materials collected.



- Allow students time to collect materials, create and test filters.
- Allow each group to present and share their creation after the allotted time.
- Discuss the following questions:
 - Was it easy to clean the water?
 - What worked well? What didn't work well? Why?
 - What were you able to remove from the water?
 - Is this water now drinkable? Why or why not? What do you think is still in the water?
 - What connections can you make between the Apple as Earth, this activity, and the texts read in class (One Well, A Long Walk to Water, etc)?
 - How important is it to care for the water in our communities? Why?
 - How do municipalities clean water?

Extending the Learning:

- Research water issues and initiatives in Canada and the world. For example, use the *Water Today* resource (www.watertoday.ca/maptest4.asp?province=8) to begin learning about how communities in Canada (for example, Attawapiskat) do not have access to clean drinking water and what the implications are of this situation.
- Have students reflect on the provided quotes from the Bible and analyze the meaning of water referenced in the verses (i.e. new life, the Holy Spirit, baptism, etc.). Have students write prayers or create reflective video presentations about water, water issues, and access to clean water as a human right in relation to the Bible verses.
- Visit a local water treatment plant to learn about the process of bringing clean drinking water into our home.
- *"All I had to do was take 10 steps from my classroom to get to the drinking fountain and I had clean water. Before that day in school, I figured everyone lived like me. When I found out this wasn't the case, I decided I had to do something about it."* These are the words of Ryan Hreljac, who at the age of 6 yrs. old decided that it was unfair that for many people in the world, clean drinking water was not available. Research the work of Ryan's Well Foundation (Ryan's Well <https://www.ryanswell.ca>).

Curriculum Connections

Religious Education

Grade 4:

LS2: Demonstrate an understanding of how the gifts received as human beings invite us to be responsible stewards of creation (i.e. natural world created by God) and to bring about His reign in the human community

ML1.3: Identify, using passages from the New Testament, the ways we are called to live the New Commandment (i.e. conversion of heart, developing in our lives an interior law of charity, openness to the grace of the Holy Spirit) in the choices we make, in our relationship with God and others.

Grade 6

ML3.1: Locate and examine gospel passages to identify how Jesus called individuals to holiness and guided them in the moral life.

PR1.2: Identify real life situations of injustice (poverty and starvation, oppression, prejudice, environmental harm, etc.) and develop intercessory prayers on behalf of those in need.



Family Life

Grade 4

E2.1: recognize and appreciate the importance of being good caretakers of the physical environment

E3.2: identify some of the ways that people can care for the physical environment

Grade 5

D2.1: recognize and appreciate that actions have consequences for ourselves and others

E1.1: recognize and appreciate the importance of using their gifts to make the world a better place for everyone

Grade 6

E2.2: recognize that they are part of the world and have a responsibility to be a positive influence on the natural environment

E3.3: describe some ways in which they can be good stewards of the natural environment

Math

Grade 4: Number Sense and Numeration

- represent fractions using concrete materials, words, and standard fractional notation, and explain the meaning of the denominator as the number of the fractional parts of a whole or a set, and the numerator as the number of fractional parts being considered

Grade 5: Number Sense and Numeration

- demonstrate and explain the concept of equivalent fractions, using concrete materials

Grade 6: Number Sense and Numeration

- determine and explain, through investigation using concrete materials, drawings, and calculators, the relationships among fractions (i.e. with denominators of 2, 4, 5, 10, 20, 25, 50, and 100), decimal numbers, and percent.

Social Studies

Grade 4: People and Environments – Political and Physical Regions of Canada

OE B2: use the social studies inquiry process to investigate some issues and challenges associated with balancing human needs/wants and use activities with environmental stewardship in one or more of the political and/or physical regions of Canada

SE B2.3 analyse and construct print and/or digital maps, including thematic maps, as part of their investigations into balancing human needs/ wants and activities with environmental stewardship in Canada

Grade 5: People and Environments – The Role of Government and Responsible Citizenship

OE B1: application: assess responses of governments in Canada, including First Nations, Métis, and Inuit governments, to some significant issues, and develop plans of action for governments and citizens to address social and environmental issues

OE B2: Inquiry: use the social studies inquiry process to investigate Canadian social and/or environmental issues from various perspectives, including those of Indigenous peoples as well as of the level (or levels) of government responsible for addressing the issues

SE B2.3: analyse and construct maps in various formats, including digital formats, as part of their investigations into social and/or environmental issues.

SE B2.4: interpret and analyse information and data relevant to their investigations, using a variety of tools

OE B3: Understanding Context: demonstrate an understanding of the roles and key responsibilities of citizens and of the different levels of government in Canada, including First Nations, Métis, and Inuit governments



Grade 6: People and Environments - Canada's Interactions with the Global Community

OE B1: Application: explain the importance of international cooperation in addressing global issues, and evaluate the effectiveness of selected actions by Canada and Canadian citizens in the international arena

OE B2: Inquiry: use the social studies inquiry process to investigate some global issues of political, social, economic, and/or environmental importance, their impact on the global community, and responses to the issues.

SE B2.3: analyse and construct different types of maps, both print and digital, as part of their investigations into global issues, their impact, and responses to them.

Language Arts Grade 4, 5, 6 – Overall Expectations

Oral Communication

1. listen in order to understand and respond appropriately in a variety of situations for a variety of purposes;
2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

Writing

1. generate, gather, and organize ideas and information to write for an intended purpose and audience;
2. draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;
3. use editing, proofreading, and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present their work effectively;

Media Literacy

1. create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;

Science

Grade 4: Habitats and Communities

OE 1. analyse the effects of human activities on habitats and communities;

Grade 5: Conservation of Energy Resources

OE 1. 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;

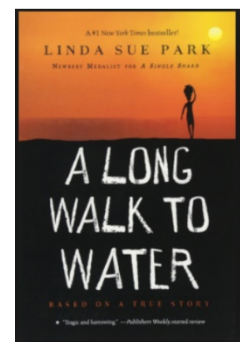
Mentor Text Connections

A Long Walk to Water: Based on a True Story

by **Linda Sue Park**

A Long Walk to Water begins as two stories, told in alternating sections, about a girl in Sudan in 2008 and a boy in Sudan in 1985. The girl, Nya, is fetching water from a pond that is two hours' walk from her home: she makes two trips to the pond every day. The boy, Salva, becomes one of the "lost boys" of Sudan, refugees who cover the African continent on foot as they search for their families and for a safe place to stay. Enduring every hardship from loneliness to attack by armed rebels to contact with killer lions and crocodiles, Salva is a survivor, and his story goes on to intersect with Nya's in an astonishing and moving way.

<https://www.goodreads.com/book/show/7981456-a-long-walk-to-water>

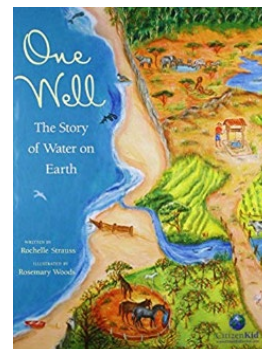


This is a great book to read aloud to the students as it explores the many issues millions face on a daily basis in their search for clean drinking water.

One Well: The Story of Water on Earth (Citizen Kid)

by Rochelle Strauss

Seen from space, our planet looks blue. This is because almost 70 percent of Earth's surface is covered with water. Earth is the only planet with liquid water -- and therefore the only planet that can support life. All water is connected. Every raindrop, lake, underground river and glacier is part of a single global well. Water has the power to change everything -- a single splash can sprout a seed, quench a thirst, provide a habitat, generate energy and sustain life. How we treat the water in the well will affect every species on the planet, now and for years to come. One Well shows how every one of us has the power to conserve and protect our global well. One Well is part of CitizenKid: A collection of books that inform children about the world and inspire them to be better global citizens.



<https://www.amazon.ca/One-Well-Story-Water-CitizenKid/dp/1553379543/?tag=a2zhomeschool00-20>

Hope Springs by Eric Walters

Faced with a water shortage caused by a drought, young Boniface learns about the desperate things people will do and his attempt to chase away that desperation – where there is water there is life. Based on the development of a real water project in Kikima Kenya this picture book features the art beautiful illustrations of Eugenie Fernandes.

www.ericwalters.net/novels/hope-springs/



This is a good book for younger readers.

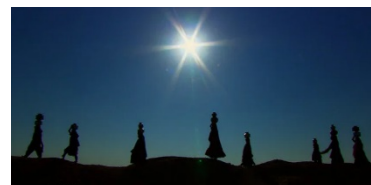
Additional Resources:

Additional Resources:

One Water

Aimed at reaching people everywhere – across national and cultural borders, this innovative visual gem features stunning high definition visuals from 5 countries combined with natural sounds and an original score performed by the Greensboro Symphony Orchestra. This award-winning version has been seen widely around the world at venues ranging from the United Nations headquarters in New York to open fields and small schoolhouses in villages of the developing world.

<http://www.onewater.org/movie>



Boil Water Advisories in Ontario

This site maps real-time water advisories. Use the map to explore water related issues in Ontario, particularly those that relate to water advisories in First Nations communities, like Attawapiskat.

WATERTODAY.CA

www.watertoday.ca/maptest4.asp?province=8

UN Global Goals for Sustainable Development

In 2015, world leaders agreed to 17 goals for a better world by 2030. These goals have the power to end poverty, fight inequality and stop climate change. Guided by the goals, it is now up to all of us, governments, businesses, civil society and the general public to work together to build a better future for everyone.

<https://www.globalgoals.org>



Learn about the UN Global Goals for Sustainable Development.

Learn about Goal 6: Clean Water and Sanitation.

The Apple as Earth activity was first introduced to me by another teacher. I also referenced the following sites/videos to create the version described in this lesson.

<https://www.youtube.com/watch?v=S8cD4M9Ayq4>

<https://pmm.nasa.gov/education/lesson-plans/freshwater-availability-classroom-activity>



Gratitude and Harvest

Junior – Autumn

Psalms 107:37

they sow fields, and plant vineyards, and get a fruitful yield.



Catholic Graduate Expectations in Action:

I am a Believer - I believe that we can talk to God anytime and anywhere, through prayer.

I am a Learner for Life - I am thankful for the gifts of others.

I Care - I care about and respect God's creation and everything in it.

Faith Connections:

Matthew 9:37-38

Then he said to his disciples, "The harvest is plentiful, but the laborers are few; therefore, ask the Lord of the harvest to send out laborers into his harvest."

How do you reflect God's bounty in your everyday life?

Principles of Indigenous Learning:

- Place-Based Learning/Local Focus
- Experiential Learning
- Relationships/Collaboration
- Engage with the Land, Nature, and the Outdoors
- Awareness of History and Tradition
- Storytelling/The Power of Story

Envision (Minds On)

Read "The Secret of Saying Thanks" by Douglas Wood, or another comparable mentor text as a read aloud. Or alternatively, show the following video on [Gratefulness](#) by Brother David Steindl-Rast.

NOTE: This activity can be done just for this lesson or added to your daily prayer routine.

Have the students rise for prayer. Begin with:



“In the Name of the Father, and the Son, and the Holy Spirit. At this time, we give thanks to God for his many blessings”. Ask students to offer what they are thankful for.

Students may share some of the things that they are thankful for. If initially no student participates, lead by example, and share something you as a teacher are thankful for.

Example: “I am thankful for the gift of food and having enough to eat.”

Students should be open to sharing once they have heard the format for their intentions of thanks. Finish off the prayers of thanks with this closing:

“For all these blessings and so many more O Lord, we give you thanks. For we are not thankful because we are happy. We are happy because we are thankful.”

NOTE: If this is an activity that you choose to do regularly, encourage students to recite the final section of the closing with you: “We are happy because we are thankful.” As the school year progresses, some students may even feel confident enough to lead the prayers of thanks.

Sow (Action)

Materials: Paper, Pencils and Clipboards

Ask the students the following guided questions:

“Where does the food that we buy come from?” Answers will vary from plants or farmers, but focus on the point of purchase, such as grocery stores or restaurants.

“How does the food get to the stores?” Students should identify trucks or other means of transportation.

Share the following with the students:

“Nowadays, we can get food from all over the world because of our technology, like ships, planes, transport trucks, and refrigeration to keep food from going bad when it is being transported. What do you think people did to obtain and preserve food before we had all this technology?”

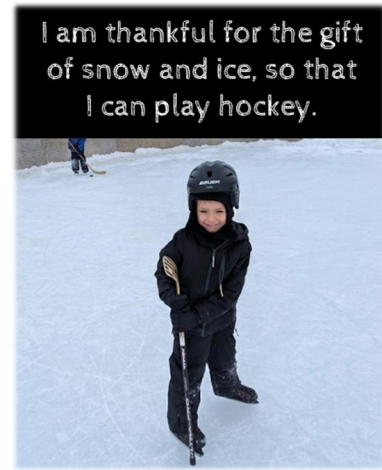
Pass out clipboards and paper to students. Bring the students outside to observe and brainstorm together what kind of foods could be grown in or around your school yard and/or community. Discuss together the difference between what we can eat today compared to the past. Continue the lesson with the following prompt:

“Indigenous people were able to successfully live off the land because of their deep understanding of nature, and the gifts of nature that would help them survive and grow. People are only now realizing how important it is to eat the traditional indigenous foods that are grown in our own communities such as blueberries, corn, squashes, beans, turnips, carrots, wild animals and fish.”



“Food is only one blessing of nature. Can you think of any other blessings of nature that we may have at our school or community?”

Have students write a short journal entry about an aspect of nature for which they are thankful. This could be in a gratitude journal that they add to once a week, or electronically as a slide in a class slideshow of Gifts of Creation. Another option is to have students use digital devices to take pictures of themselves and what they are thankful for, and create electronic images using software to add text, that can be shared at a program night with parents.



Nurture (Consolidation)

Idea #1

With students, organize an outdoor liturgy using the Outdoor Liturgy Outline included. The liturgy can be for the class, your grade team, or even the school. Invite administration, parents and members of the parish to celebrate nature with you.

Idea #2

Consider growing a vegetable garden modeling the traditional method used by the Haudenosaunee. Explore the traditional method of a companion garden or Three Sisters Garden by growing corn, beans, and squash. For information about the tradition of planting corn, beans, and squash together, and for information about planting a Three Sisters Garden, use the following links:

- CBC Parents: How to Grow a Three-Sisters Garden (<https://www.cbc.ca/parents/play/view/how-to-grow-a-three-sisters-garden>)
- Kids Gardening “Three Sisters Garden” Lesson Plan (<https://kidsgardening.org/lesson-plans-three-sisters-garden/>)
- The Legend of the Three Sisters (<http://www.oneidaindiannation.com/the-legend-of-the-three-sisters/>)
- Recipe: Three Sisters Soup (<https://www.allrecipes.com/recipe/64681/three-sisters-soup/>)

NOTE: Please see the EOCCC resource Called to Serve, Act, and Reflect for further information and math-related lesson ideas connected to the Three Sisters Garden

(http://www.eoccc.org/uploads/4/6/7/0/46705249/eoccc_indigenous_teachings_experiential_mathematics_-_revised_nov_3.pdf)



Curriculum Connections

OE= Overall Expectation, SE = Specific Expectation

Click on link to go to the specific curriculum page for that subject and grade.

Religion:

ML3: Demonstrate an understanding of the important personal responsibility that each person has to form their moral conscience as a sign of Christian maturity and a commitment to the call to holiness.

Social Studies

Grade 4

Compare key aspects of life in a few early societies (to 1500), including at least one First Nation and one Inuit society, each from a different region and era and representing a different culture, and describe some key similarities and differences between these early societies and present-day Canadian society. OE A3, SE A1.3, A3.3, A3.5

Grade 5

Analyse some key short- and long-term consequences of interactions among Indigenous peoples, among Europeans, and between Indigenous and European people prior to 1713 in what would eventually become Canada. OE A1, SE A1.1, A1.2

Grade 6

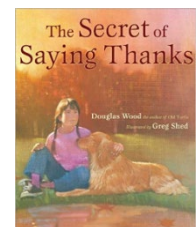
Assess contributions to Canadian identities made by various groups and communities, including First Nations, Métis, and Inuit communities, and by various features of Canadian communities and regions. OE A1, A1.2, A1.4

Mentor Text Connections

The Secret of Saying Thanks

By: Douglas Woods

A heartfelt narrative lesson about the importance of being thankful and what happens when people fill their heart with gratitude.



The Grateful Book

By: Angela Kohler

A colorful and poignant summary of all the wonderful and beautiful things we should be grateful for in the world.



Additional Resources:



Outdoor Liturgy Outline

We begin our liturgy in the name of the Father and the Son and the Holy Spirit.

Opening Prayer

For flowers that bloom about our feet,
For tender grass, so fresh, so sweet,
For song of bird, and hum of bee,
For all things fair we hear or see,
Father in heaven, we thank Thee!

For blue of stream and blue of sky,
For pleasant shade of branches high,
For fragrant air and cooling breeze,
For beauty of the blooming trees,
Father in heaven, we thank Thee!

First Reading - Genesis 1: 28 - 2: 3

God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth. God said, "See I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food. And to every beast of the earth, and to every bird of the air, and to everything that creeps on the earth, everything that has the breath of life, I have given every green plant for food. And it was so. God saw everything that he had made, and indeed, it was very good. And there was evening and there was morning, the sixth day. Thus the heavens and the earth were finished, and all their multitude. And on the seventh day God finished the work that he had done, and he rested on the seventh day from all the work that he had done. So God blessed the seventh day and hallowed it, because on it God rested from all the work that he had done in creation.

Responsorial Psalm: **Psalm 95**

The response is: **The Lord is a Great God**

O come, let us sing to the Lord;
let us make a joyful noise to the rock of our salvation!
Let us come into his presence with thanksgiving;
let us make a joyful noise to him with songs of praise!

Response: **The Lord is a Great God**



For the Lord is a great God,
and a great King above all gods.
In his hand are the depths of the earth;
the heights of the mountains are his also.
The sea is his, for he made it,
and the dry land, which his hands have formed.

Response: **The Lord is a Great God**

Second Reading:

Reader 1: How wonderful, O Lord, are the works of your hands! The heavens declare Your glory, the arch of sky displays Your handiwork.

All: The heavens declare the glory of God.

Reader 2: In Your love You have given us the power to behold the beauty of Your world, Robed in all its splendor.

Reader 3: How wonderful, O Lord, are the works of your hands! The heavens declare Your glory, the arch of sky displays Your handiwork.

All: The heavens declare the glory of God.

Reader 4: In Your love You have given us the power to behold the beauty of Your world, robed in all its splendor.

Reader 5: The sun and the stars, the valleys and the hills, the rivers and lakes, all disclose Your presence.

All: The Earth reveals God's eternal presence.

Reader 6: The roaring breakers of the seas tell of Your awesome might; The beasts of the fields and the birds of the air bespeak Your wondrous will.

All: Life comes forth by God's creative will.

Reader 7: In Your goodness You have made us able to hear the music of the world.

Reader 8: The raging of the winds, the whisperings of trees in the wood, and the precious voices of loved ones reveal to us that You are in our midst.

All: The Divine voice sings through all of creation.



Gospel - Matthew 9:35-38

Jesus went through all the towns and villages, teaching in their synagogues, proclaiming the good news of the kingdom and healing every disease and sickness. When he saw the crowds, he had compassion on them, because they were harassed and helpless, like sheep without a shepherd. Then he said to his disciples, "The harvest is plentiful but the workers are few. Ask the Lord of the harvest, therefore, to send out workers into his harvest field.

Intentions

The response is "Lord hear our prayer"

For the good earth which God has given us, and for the wisdom and will to conserve it, let us pray to the Lord.

Grant that we learn that what we do to this Earth, we also do to ourselves. We pray to the Lord.

We pray that we cherish both the living water, and the water that flows upon the Earth so that we may help our brothers and sisters who continue to thirst. We pray to the Lord.

Help us to become aware of how our actions here at school can help or hurt innocent people and creatures throughout the world. We pray to the Lord.

Closing Prayer - Great Spirit Prayer of the Lakota People

"Oh, Great Spirit, whose voice I hear in the wind,
Whose breath gives life to all the world.
Hear me; I need your strength and wisdom.
Let me walk in beauty, and make my eyes ever behold the red and purple sunset.
Make my hands respect the things you have made and my ears sharp to hear your voice
Make me wise so that I may understand the things you have taught my people.
Help me to remain calm and strong in the face of all that comes towards me.
Let me learn the lessons you have hidden in every leaf and rock.
Help me seek pure thoughts and act with the intention of helping others.
Help me find compassion without empathy overwhelming me.
I seek strength, not to be greater than my brother, but to fight my greatest enemy
Myself.
Make me always ready to come to you with clean hands and straight eyes.
So when life fades, as the fading sunset, my spirit may come to you without shame.

Amen



Possible Song Selections (if desired) Catholic Book of Worship III

531 For the Beauty of the Earth
532 For the Fruit of All Creation
534 Let All Things Now Living
537 God, Whose Firm is All Creation
542 Canticle of the Sun
545 Sing Out, Earth and Skies
548 All the Ends of the Earth



BLM 7 : Songs

Catholic Book of Worship III

531 For the Beauty of the Earth
532 For the Fruit of All Creation
534 Let All Things Now Living
537 God, Whose Firm is All Creation
542 Canticle of the Sun
545 Sing Out, Earth and Skies
548 All the Ends of the Earth

Student Selections:



BLM 8 : Locations

- School Courtyard
- Field
- Hill
- Near trees
- Garden

Student Locations:



The Art of Observation: Colours, Change, & Transitions

Junior – Fall

Autumn Prayer: O God of Creation, you have blessed us with the changing of the seasons. As we embrace these autumn months, may the earlier setting of the sun remind us to take time to rest. May the crunch of the leaves beneath our feet remind us of the brevity of this earthly life. May the steam of our breath in the cool air remind us that it is you who give us your breath of life. May the scurrying of the squirrels and the migration of the birds remind us that you call us to follow your will. We praise you for your goodness forever and ever. Amen.

(<https://www.catholicfamilyfaith.com/2009/11/autumn-prayer.html>)



Catholic Graduate Expectation(s) in Action:

- I believe that God is an awesome God
- I believe that God is with us always
- I believe that we can talk to God anytime and anywhere, through prayer
- I speak, write and listen as Jesus would want me to
- I have thoughts and opinions that matter
- I use my gifts and talents given to me by God
- I always do my best
- I work hard in school so that I can build my community and make it a better place
- I care about and respect God's creation and everything in it
- I respect and protect the world and all that is in it

Faith Connections:

A Time for Change

Autumn is a time of change. Much of nature slows down and prepares for a time of rest. Leaves change colour and drop to the ground, changing lush trees to naked branches. Beautiful blossoms wither and turn to seed. The air turns cooler, the days shorten, and animals get ready to hide away and hibernate. But throughout this time of change, we are reminded of God's constant presence.

Consider the following Bible passages in relation to fall:

Psalms 102:25-27

Long ago you laid the foundation of the earth, and the heavens are the work of your hands. They will perish, but you endure; they will all wear out like a garment. You change them like clothing, and they pass away;



but you are the same, and your years have no end.

Hebrews 13:8

Jesus Christ the same yesterday, and today, and forever.

- Discuss how the passages relate to fall and the changes that we witness in nature during the season.
- Discuss how the season of fall can remind us of God's presence.

Sometimes change is hard to accept. Change can be uncomfortable and frustrating at times. Yet, we are reminded that what happens in our life is part of God's plan for us and that we should continue forth with faith, accepting change as we face it.

Consider the following Bible passages in relation to accepting change:

Romans 8:28

We know that all things work together for good for those who love God, who are called according to his purpose.

Mark 7:37b

He has done everything well.

Philippians 1:6

I am confident of this, that the one who began a good work among you will bring it to completion by the day of Jesus Christ.

- Reflect about autumn and the changes that the season brings for you to face. How do you feel about these changes? How do you cope and adapt to these changes?
- Think about times of change in your lifetime to date. What was the cause and impact of the change(s)? How did you react to being faced with the change(s)? What helped you adapt to the changes you experienced.

Consider the following prayer written by Reinhold Niebuhr:

"God grant me the serenity
to accept the things I cannot change;
courage to change the things I can;
and wisdom to know the difference.

Living one day at a time;
enjoying one moment at a time;
accepting hardships as the pathway to peace;
taking, as He did, this sinful world
as it is, not as I would have it;
trusting that He will make all things right



if I surrender to His Will;
that I may be reasonably happy in this life
and supremely happy with Him
forever in the next.
Amen.”

- What is this prayer trying to teach us?
- When might this prayer be helpful to offer up to God?

Additional Scripture Passages or Faith-Based Texts to Explore:

Ecclesiastes 3: 1-8

For everything there is a season, and a time for every matter under heaven:

a time to be born, and a time to die;
a time to plant, and a time to pluck up what is planted;
a time to kill, and a time to heal;
a time to break down, and a time to build up;
a time to weep, and a time to laugh;
a time to mourn, and a time to dance;
a time to throw away stones, and a time to gather stones together;
a time to embrace, and a time to refrain from embracing;
a time to seek, and a time to lose;
a time to keep, and a time to throw away;
a time to tear, and a time to sew;
a time to keep silence, and a time to speak;
a time to love, and a time to hate;
a time for war, and a time for peace.

Principles of Indigenous Learning:

- Engagement with the Land, Nature and the Outdoors
- The Power of Story (Storytelling)
- Experiential Learning
- Place-based/Local Focus

Envision (Minds On)

Autumn is a season of transitions. What transitions in nature will the students notice when they take time to slow down and observe their surroundings?

Read one or several of the suggested mentor texts to facilitate a discussion about the art of observation and perspective.

- What does it mean to observe?



- How is observation influenced or impacted by perspective?
- How might observation impact a person's perspective?

Sow (Action)

Choose and share a location (ie. park, schoolyard, forest, or shoreline) near your school. Together as a group, observe the area and discuss:

- What happens to the environment in autumn?
- What animals do you notice and what are they doing?
- When we go to _____ what changes might be observed?

Model how to use your five senses to make observations. Using a chart with a column for each sense will help to keep documentation of observations organized. Document your observations. Demonstrate how to use specific language to document what you notice and observe.

Provide students the chance to observe and wonder on their own. Encourage students to draw what they see, labeling the drawing using vocabulary they know. Students should write about what they see, hear, smell and feel (touch). Students should also write any questions they have about their observations. For example, *"Why is the leaf red? Why does it change colour at this time of year? Why do some trees not lose their leaves?"*.

When going on your observation walks:

- Provide each student with a pencil and a journal in which students can draw and write. Alternatively, provide some students with cameras and/or mobile device for recording observations, descriptions and wonderings.
- Bring along magnifying glasses, small containers and jars to facilitate observations.
- Have students spread out so that they are sitting individually within a designated area. The purpose of the activity is to have students observe, describe, and wonder about the colours, changes and/or transitions in this natural environment. Give students plenty of time to complete this activity.
- Encourage students to look all around, including in the sky, among the trees, in the grass, etc. This might be an opportunity for students to take photographs of objects or scenes of interest.
- While students are journaling, the teacher could take pictures of what the students are observing, as well as other interesting transitions or interactions in the local environment.

Nurture (Consolidation)

Facilitate a discussion back in class about the students' observations and wonderings:

- Ask students to share his/her observations and questions.
- Create a "Wonder Wall" of students' questions and observations.



After the sharing, organize the Wonder Wall into related topics and themes. Using the Bloom's Questions Matrix (see additional resources) have students write high-level questions about the overall themes that have been created. Students can then choose a question (individually or in small groups) to research and report on. Students can report on their findings in a variety of ways including; presentations, videos, written reports, poster board, etc.

Additional Ideas for Applying and Extending Learning:

- Have students visit the same spot throughout the year to observe environmental differences throughout the seasons.
- Have students create a drawing and painting of his/her observations using a photo taken by the teacher. Place the photo in the middle of a piece of paper. Students extend the photo on the rest of the paper.
- Write Haiku poems or other styles of poems about things noticed during observations
- Use the mentor text *Window* by Jeannie Baker to open discussion about natural change vs. human change and transition.
- What actions can we take as humans to help the natural world get ready for and survive winter?
- Have students write their own prayers about autumn, thanking God for the things they notice in nature during this season.
- Find out from a community partner about the teachings of Fall. What learning and understanding does the Indigenous community take from the season? What ceremonies or traditions are rooted in Autumn?

Curriculum Connections

Religious Education

Grade 4:

LS2: Demonstrate an understanding of how the gifts received as human beings invite us to be responsible stewards of creation (i.e. natural world created by God) and to bring about His reign in the human community

Family Life

Grade 4

E2.1 recognize and appreciate the importance of being good caretakers of the physical environment

Grade 6

E2.2 recognize that they are part of the world and have a responsibility to be a positive influence on the natural environment

E3.3 describe some ways in which they can be good stewards of the natural environment

Science

Grade 4: Habitats and Communities

OE 2. investigate the interdependence of plants and animals within specific habitats and communities;

OE 3. demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them.



Grade 6: Biodiversity

OE 2. investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;

OE 3. demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.

Language Arts (Grade 4, 5, 6 – Overall Expectations)

Oral Communication

1. listen in order to understand and respond appropriately in a variety of situations for a variety of purposes;
2. use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes;

Reading

1. read and demonstrate an understanding of a variety of literary, graphic, and informational texts, using a range of strategies to construct meaning;

Writing

1. generate, gather, and organize ideas and information to write for an intended purpose and audience;
2. draft and revise their writing, using a variety of informational, literary, and graphic forms and stylistic elements appropriate for the purpose and audience;
3. use editing, proofreading, and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present their work effectively;

Media Literacy

- create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;

The Arts

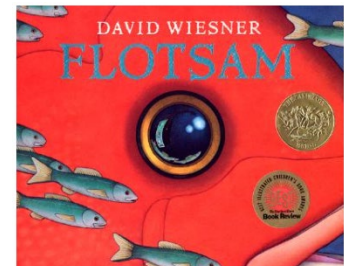
Visual Arts (Grades 4, 5, 6 Overall Expectations)

D1. Creating and Presenting: apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings.

Mentor Text Connections

Flotsam by David Wiesner

FLOTSAM presents a series of photographs recovered from a camera dredged up from the bottom of the sea. Wiesner's book encourages readers to drop their preconceived notions of what is possible, and to closely observe the details of his illustrations – and the ways the details might trick you. When you're done pouring over the books, check out his amazing app, SPOT. Users zoom in and out of pictures, finding with each change in size, a new world within a world within a world.



<https://nerdybookclub.wordpress.com/2018/02/03/ten-picture-books-about-observation-and-perspective-by-katey-howes/>



Flashlight by Lizi Boyd

Flashlight is a playful, thought-provoking, wordless picture book. A child in a tent shines a light into the world – and sees only what is illuminated by its triangular beam. Readers will enjoy discussing what they see – and also what they do not. *Flashlight* gets readers thinking about what we see – and what we miss – when observing the world around us through a narrow beam.

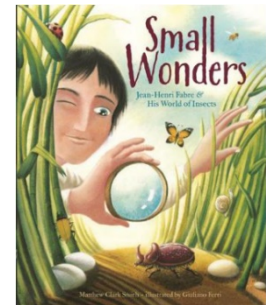
<https://nerdybookclub.wordpress.com/2018/02/03/ten-picture-books-about-observation-and-perspective-by-katey-howes/>



Small Wonders – Jean Henri Fabre and His World of Insects by Matthew Clark Smith (Illustrated Giuliano Ferri)

Small Wonders is an engaging nonfiction biography of French entomologist Fabre, who from childhood was enchanted by insects. His story will inspire readers to look closely at the world around them, discovering that wonders hide just out of sight.

<https://nerdybookclub.wordpress.com/2018/02/03/ten-picture-books-about-observation-and-perspective-by-katey-howes/>



Additional Resources

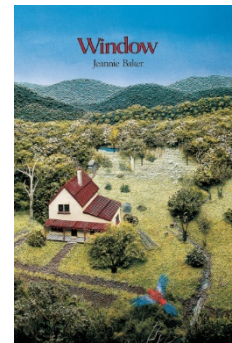
WINDOW (JEANNIE BAKER)

A wordless picture book exploring the concept of exponential change.

A mother and baby look through a window at a view of wilderness and sky as far as they can see. As Sam, the baby, grows, the view changes. At first, in a cleared patch of forest, a single house appears. A few years pass and there is a village in the distance. The village develops into a city.

Sam, now a young man, gets married, has a child of his own and moves to the country. Now father and baby look through a window in their new home. The view again is of a wilderness, but in a cleared patch of forest across a dirt road a prophetic sign reads, 'House Blocks for Sale'.

<https://www.jeanniebaker.com/book/window/>



The Bloom's Question Matrix

Use this tool to help students create rich, deep, higher-order thinking questions to guide his/her inquiry.

<https://belmontteach.files.wordpress.com/2014/01/the-blooms-question-matrix.jpg>

The Bloom's Question Matrix

	What	Who	Where	When	How	Why
Lower	Identify					
	Describe					
	Explain					
	Analyze					
	Evaluate					
Higher	Produce					

Journey to higher thinking

