Chapter 9:

The Integratable Elements

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Guiding Principle: The Learning Program

The Kindergarten learning program provides many opportunities for child-initiated play supported by engaged and intentional teachers, in balance with more focused experiential inquiry guided by teachers.

Guiding Principle: Inclusion and Diversity

Kindergarten experiences reflect the diversity of children, families, and colleagues, and actively promote inclusion.

Kindergarten Integratables at a Glance

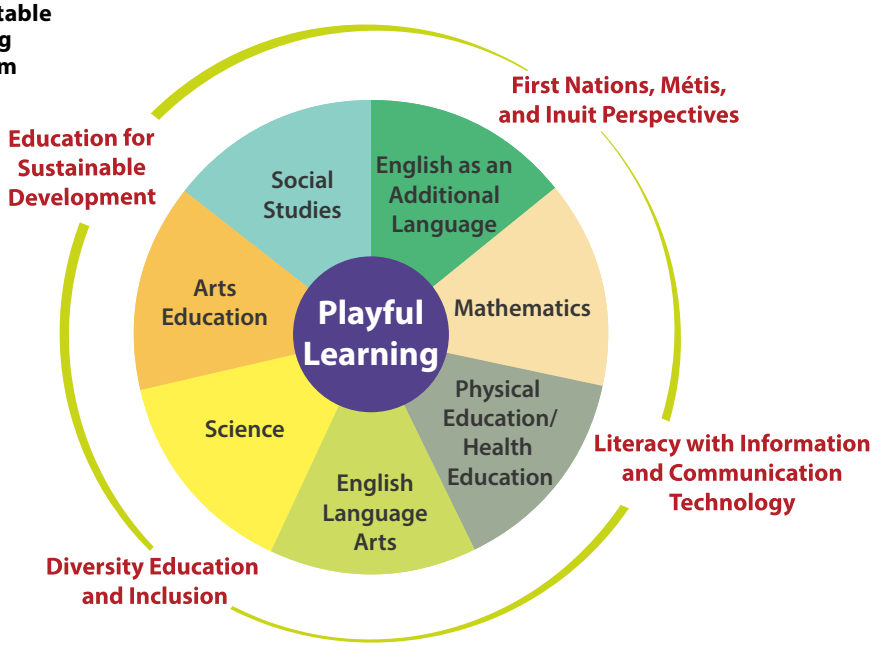
Chapter 8 focuses on how intentional teachers approach Manitoba's Kindergarten curriculum by considering the learning landscapes through which children journey. Scaffolding upon those ideas, Chapter 9 provides opportunities to think about the many ways you might embed content that further enriches children's play-based learning, while meeting departmental priorities.

The integratable elements of learning in Manitoba are overarching and integral to your Kindergarten learning program. The integratable elements of learning across the curriculum (see Figure 9.1) are:

- education for sustainable development
- First Nations, Métis, and Inuit perspectives
- literacy with information and communication technology
- diversity education and inclusion

These elements are essential to authentic, critical, and creative learning within the learning landscapes (Western and Northern Canadian Protocol for Collaboration in Education).

Figure 9.1: Integratable Elements of Learning across the Curriculum



What does this integration look like in action? The following vignette describes how a teacher of a combined junior Kindergarten/Kindergarten classroom and a Grade 1 teacher, from two different schools in two different communities, worked together to address the integratable elements of learning and the curriculum in a meaningful and authentic way, while ensuring deep learning by young children.

Vignette: Little Hands, BIG World

Project Outcomes

Children will

- cooperate and collaborate with others to identify and explore important issues
- develop and implement action plans that address issues they have identified as important
- use information and communication technology (ICT) responsibly to build knowledge, achieve curricular outcomes, and think critically/creatively in authentic situations
- become informed, responsible decision makers, playing active roles as global citizens and contributing to others' well-being

Learning Experiences

- Using a project-based learning approach, the children explored a variety of sustainability topics, as determined by their own interests and by identified needs in the community.

- Children began by exploring how we help and hurt the environment. Using the interactive whiteboard, we examined a variety of pictures showing environmentally helpful and hurtful practices. The children used digital cameras, their own digital drawings, and Microsoft AutoCollage to create posters promoting litter reduction, tree planting, and bike riding and/or walking. These posters were shared digitally through social media.
- Children measured the amount of garbage they were generating each day at lunchtime. We tweeted this data and challenged partner classrooms to a litterless lunch competition. On designated days, the children tried to bring as many reusable containers as possible, counting, graphing, and tweeting the results.
- Reusable bag use was also explored. Children visited a local grocery store and used tablets to track how many reusable bags and plastic bags were used in an hour. They were shocked to discover that the majority of people in our communities still used plastic bags. Children used Skype to share information and brainstorm ideas for a solution with friends in another school. They decided to create "reminder tags" for people to hang in their cars or on the doors of their homes to remind them to bring their reusable bags to the store. Our Grade 1 partner class created adhesive reminder tags with quick response (QR) codes so people could scan them for more information about the project. Children from both classrooms collaborated to create criteria for designing and producing their reusable bag reminder tags.

Student-Generated Criteria for Reusable Bag Reminder Tags

- Children chose to address the issues of animal rescue. A worker from a local animal rescue shelter visited our partner class, and we used Skype to ask questions about her work. Both classrooms were inspired to collect old towels and blankets to be reused for animal bedding. We also contacted Brandon Humane Society and our local veterinarian. We learned about why the animals don't have homes, and the children asked how they could help. They decided to bake treats for the animals at the humane society. This led to a lot of shared reading (as we explored recipes) and interactive writing (as we created a shopping list). Students raised money for the project by creating a movie and presenting it to the Parent Advisory Council and the Student Council. After a field trip to the grocery store to purchase ingredients, we started baking and freezing treats every week at our cooking centre (many numeracy outcomes were met as we measured and counted). The project was completed when we

took a field trip to Brandon Humane Society, meeting the pets and presenting the treats in person.

- Throughout these inquiries and learning experiences, children were actively involved in making substantive decisions about their learning and about solving real-world problems in their classrooms, homes, and local/global communities.
- Children perceived the activities as fun and were highly engaged throughout—they saw their work as important and purposeful as they baked dog/cat treats, created reusable bag reminder tags, and so on.
- Dramatic play centres, such as a vet clinic and grocery store, provided children with additional opportunities to explore the topics.
- ICT tools such as free applications that support video conferencing and social media were essential to exploring these topics, communicating with our partner classroom in another community and other stakeholders, such as the Brandon Humane Society, and sharing our learning with a larger audience. Ethical and responsible use of technology was interwoven throughout the learning experiences. The *Developmental Continuum for Literacy with ICT* ("The Literacy with ICT Continuum," Manitoba Education and Advanced Learning) provided a guideline for developmentally appropriate infusion of ICT.

What Teachers Learned

- Collaboration among teachers, students, and schools was rewarding for everyone involved. Collaboration provided an authentic audience, enhanced student and teacher engagement, and multiplied the resources available to all involved.
- Project-based learning empowered learners and gave an urgency and a purpose for developing and applying early literacy and numeracy skills.
- Our youngest learners functioned as change agents and had a powerful impact on their families and communities. Little hands can make a difference in our big world.

The Landscape of Education for Sustainable Development

Sustainability is about preparing our students, ensuring they are environmentally responsible, globally aware, economically astute, and socially responsible citizens capable of coping with the emerging challenges and opportunities we are facing now and will face in the future.

Education for sustainable development (ESD) learning outcomes are embedded in the Manitoba curriculum. ESD infuses sustainability awareness into all aspects of schooling, including outdoor learning spaces. It is reflected in the curriculum across all subject areas and is learner-centred and action-oriented. By placing learning in a local context in our communities and the outdoors, Kindergarten children can develop a sense of responsibility to the natural world and the people around them.

Integration of Education for Sustainable Development

Rationale

One of the overarching goals of Manitoba Education and Advanced Learning is "to ensure education in Manitoba supports students experiencing and learning about what it means to live in a sustainable manner" (*Mandate, Mission, Vision, Overarching Goals and Priority Action Areas*). In supporting children "learning to live sustainably," it is helpful to think of the three pillars of ESD: the environment, the economy, and human health and well-being. There is a commitment to care for

- **oneself**—our health and well-being
- **each other and all life forms**—across cultures, generations, and locations
- **the biosphere**—locally and globally

Organization of ESD in Kindergarten

In Kindergarten, the overarching ESD themes are that students consider their own needs, the needs of others, and the needs of future generations. Students' learning experiences focus on

- respecting and caring for other people in the local community and other places in the world
- caring for all living things in our environment
- recognizing that human survival is dependent on the environment
- respecting the natural environment while participating in physical activity
- exploring personal wellness and healthy lifestyle practices, recognizing emotions, and connecting health and happiness

ESD Learning Environment

Through an interdisciplinary, play-based approach, children in Kindergarten begin their exploration of rights and responsibilities by looking at personal responsibility, cooperation, their own needs and those of others (considering the ability of the natural world to provide), and living peacefully.

Students explore personal and social management and healthy lifestyle practices, and they learn to recognize their range of emotions and connect health and happiness.

Students learn to appreciate and respect the natural environment while being physically active outdoors. They begin to recognize the food guide rainbow, featured in *Eating Well with Canada's Food Guide* (Health Canada), and that food helps them to grow and feel good. They recognize safety indicators in the environment and understand who safety helpers are. They learn to make decisions that reflect care, concern, and responsibility for the environment. Students explore scientific inquiry and are encouraged to ask questions and develop curiosity about living things and events in their immediate environment, develop a curiosity and wonder about the natural environment, and examine how it influences their daily life. They are also encouraged to take action to live sustainably.

(L) Children's art affirms that their helping hands can change the world. (Centre) A compost pail reminds children about how snack and cooking scraps go in, and rich soil comes out. (R) A child writes about how she will help the Earth.

An ESD Project Emerges

In one classroom, a huge interest in frogs was generated in response to one boy bringing in a frog as his contribution for the letter *F*. Soon, an inquiry unfolded that had Kindergarten children mobilizing to save the endangered Oregon spotted frog habitat. As a way to raise funds for their cause, the children held an iced tea and cookie sale and earned over $120 to help "the Oregon spotted frog and sick kids." The money was divided between attempts to rescue the frogs and a donation to the Children's Hospital Research Foundation.

(L) Children at their tea and cookie stand. (R) The children's promotional poster.

The Influence of the Outdoors

A number of studies (Taylor and Kuo; Maller et al.; Berman, Jonides, and Kaplan) have shown the value of learning in the outdoors. Nature-based education, land-based education, schoolyard gardening/naturalization, outdoor learning centres, forest schools, and nature Kindergartens have all become important educational trends.

Some schools are working hard to naturalize their playgrounds with species indigenous to Manitoba and to create outdoor classrooms where children's learning can occur in the fresh air. FortWhyte Alive is a source for information about how to move such a project forward in your own school and community. Manitoba Education and Advanced Learning has partnered with FortWhyte Alive* to assist educators to "naturescape" (connecting greening to the curriculum) and in outdoor education (assisting teachers to take curricular learning outdoors).

"As a child, one has that magical capacity to move among the many eras of the earth; to see the land as an animal does; to experience the sky from the perspective of a flower or a bee; to feel the earth quiver and breathe beneath us; to know a hundred different smells of mud and listen unselfconsciously to the soughing of the trees" (Andrews 17).

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* For additional information, see:
FortWhyte Alive. "Naturescape for Educators." *For Educators.* <https://www.fortwhyte.org/foreducators/teacherpd/naturescape-for-educators/> (21 Nov. 2014).

————. "Outdoor Educator." *For Educators.* <https://www.fortwhyte.org/foreducators/teacherpd/outdoor-educator/> (21 Nov. 2014).

(L) A bird feeder can be observed through a Kindergarten classroom window.

(R) Tomatoes grow right outside the Kindergarten classroom door.

If you spend significant time outdoors with your Kindergarten children, plan ahead to ensure children and adults have the gear (equipment and clothing) needed to be comfortable in outdoor learning experiences. Help families get on board with the idea that their children will play outdoors every day, even on cold days. At your Kindergarten open house or first day in the classroom, invite parents to leave a complete set of extra clothes for their child at school in case of a puddle mishap. You may strategically choose to keep one additional gender-neutral set on hand to be really safe.

Children will need the following items at various points of the year (and you will need most of them as well). Many of the items can be stored in children's cubbies.

Children's Gear for Outdoor Learning

To Keep at School	Seasonal
■ wool socks (three pairs during winter) ■ mittens (three pairs during winter) ■ a toque (during winter) ■ a sun hat (during spring and summer) ■ a small backpack ■ a small clipboard and pencils stored in a resealable plastic bag ■ extra change of clothes (underwear, pants, shirt, socks)	■ rubber boots of good quality ■ runners (no open-toed shoes) ■ a small water bottle ■ sunscreen ■ insect repellent ■ splash pants for spring or fall rainy days or for muddy days in the forest ■ a raincoat ■ fleece pullovers, hooded jackets, or vests ■ a snowsuit ■ a long underwear set (long-sleeved shirt and pants—not cotton)

In addition to the children's gear, your class kit for outdoor learning should include tools such as

- magnifying glasses, binoculars, and kaleidoscopes
- tape measures and yard/metre sticks
- a bird feeder and seed
- nature journals and pencils

- an all-weather thermometer (e.g., to measure snow temperature)
- a sturdy rope
- a tarp and clips (to create shade or shelter)
- a digital camera

These tools will encourage children's inquiry and problem solving and support curricular outcomes.

The Landscape of First Nations, Métis, and Inuit Perspectives

The integration of First Nations, Métis, and Inuit perspectives is a priority for education in Manitoba:

> Aboriginal perspectives are based on the distinct world view of the Aboriginal cultures. This world view has humans living in a universe made by the Creator and needing to live in harmony with nature, one another, and with oneself. Each Aboriginal culture expresses this same world view in a different way, with different practices, stories, and cultural products. (Western Canadian Protocol for Collaboration in Basic Education 132, cited in Manitoba Education and Youth, *Integrating Aboriginal Perspectives into Curricula* 1)

> Schools have the responsibility to ensure that Aboriginal perspectives are fairly and accurately conveyed to all students. The inclusion of Aboriginal perspectives into curricula will benefit not only Aboriginal peoples, but non-Aboriginal peoples as well. All students are denied a quality education if they are not exposed to the contributions made by all people in the development of the country in which they live. (Manitoba Education and Youth, *Integrating Aboriginal Perspectives into Curricula* 1)

First Nations, Métis, and Inuit perspectives are infused into Manitoba curricula, resources, and classroom principles and practices.

Integration of First Nations, Métis, and Inuit Perspectives

Rationale

All students benefit from the meaningful inclusion of First Nations, Métis, and Inuit perspectives in the curricula, resources, and pedagogy:

- First Nations, Métis, and Inuit children develop a sense of identity and pride in their cultures.
- Non-Indigenous children develop understanding of and respect for First Nations, Métis, and Inuit cultures.
- Increased sense of identity, pride, and sense of belonging contribute to enhanced academic outcomes for First Nations, Métis, and Inuit students, including retention and graduation.
- Knowledge and understanding of Indigenous history and cultures by all students is integral to understanding the Canadian experience and context, allowing Indigenous and non-Indigenous Canadians to work together to create an equitable society based on respect and understanding.

(continued)

Integration of First Nations, Métis, and Inuit Perspectives

Organization of First Nations, Métis, and Inuit Perspectives in Kindergarten

The inclusion of First Nations, Métis, and Inuit perspectives across the curriculum provides rich opportunities to

- teach holistically, including intellectual, physical, emotional, and spiritual teaching and learning opportunities
- create processes of celebrating strengths, resilience, giftedness, sense of selfhood, feelings of competence, community, belonging, and relationships
- discover, nurture, and build on children's gifts
- have high expectations of students
- connect school learning to home and community

First Nations, Métis, and Inuit Perspectives-Rich Learning Environment

The First Nations, Métis, and Inuit perspectives-rich Kindergarten classroom

- reflects the diversity of the classroom, including First Nations, Métis, and Inuit cultures
- nurtures First Nations, Métis, and Inuit values
- is a safe haven for learning
- connects curriculum content to culture and identity
- fosters collaboration and cooperation
- is a site for culturally based teaching and learning, including storytelling as a regular pedagogical practice, and incorporates experiential and outdoor learning experiences
- fosters acceptance and respect
- celebrates First Nations, Métis, and Inuit cultures, contributions, and achievements
- provides opportunities for collaboration and cooperation
- uses student data to identify and address barriers to student learning in policy and practice

(L) Ojibwe and Cree cultures are celebrated through culturally affirming photos and artifacts.
(R) A dreamcatcher welcomes children to this classroom.

Viewing the Kindergarten Curriculum from First Nations, Métis, and Inuit Perspectives

How would your integrated approach to the Kindergarten curriculum look through an Indigenous lens? Think about the following goals, and consider which of these educational practices you can weave into your approach.

- **Build personal identity and relationships:**

  The Kindergarten experience should facilitate relationship building between the child and peers, between the child and the teacher, and with the natural environment (Toulouse, *Achieving Aboriginal Student Success*).

  - Understand that Indigenous connections to the land are not general but relate to specific sites. Indigenous knowledge is based upon an intimate, protracted relationship between a community and its environment.
  - Recognize the student's knowledge, experience, and world view.
  - Respect and emphasize the strengths of the child and build upon those strengths to structure learning and construct knowledge.
  - Meaningfully include family and community in the learning process.
  - Engage students in pairs, small groups, and larger groups.

- **Cultivate wonder and making meaning of the world:**

  Learning should encompass all aspects of a child's being: physical, intellectual, emotional, and spiritual.

  - Infuse foundational First Nations, Métis, and Inuit ways of knowing.
  - Celebrate First Nations, Métis, and Inuit cultures.
  - Use authentic and meaningful First Nations, Métis, and Inuit resources.
  - Employ teaching and assessment practices that reflect Indigenous ways of knowing.
  - Include traditional/holistic and Western approaches to teaching.
  - Include experiential learning among your teaching strategies.

- **Communicate understanding:**

  - Employ teaching and assessment practices that reflect Indigenous ways of knowing.
  - Use Indigenous teaching practices such as storytelling and circle learning.
  - Through professional learning and experience,
    - build cultural proficiency
    - examine your own practices and principles and build knowledge of anti-racist education

- **Perceive the world:**
  - Employ culturally affirming, authentic resources.
  - Invite Elders to share traditional knowledge. (See Appendix S: Elders in the Classroom for protocols about inviting Elders to your school.)
  - Include visual and kinesthetic teaching/learning strategies.
  - Create culturally affirming, holistic learning environments.
  - Build knowledge of Indigenous histories, cultures, ways of knowing, and pedagogy through professional learning.
  - Afford students opportunities to reflect on questions.
  - Give students multiple ways to respond to questions and complete learning activities.

As part of their inquiry into Métis culture during Festival du Voyageur, children in a French immersion school examine Métis sashes. They later practise weaving for themselves, discovering more about patterns (mathematics) and colours (science) during this learning experience.

The following table describes some of the unique and holistic ways Kindergarten-age children can be supported to understand First Nations, Métis, and Inuit (FNMI) peoples.

Early Learning / Kindergarten: Holistic Engagement with FNMI Nations

From the age of four to five years, children's emotional and moral development is rapidly growing and greatly impressionable. At this stage they are forming images of self, beginning to express ideas, asking questions and learning to engage in discussion.* This is a time for growth, compassion and understanding FNMI peoples through a holistic perspective.

Geographical Area/s OR Terms OR Nations to Highlight	Suggested Contributions to Highlight	General Subject and Potential Strategies
Always start with the local FNMI Nations and their self-identification terms. Turtle Island First Nations Métis Inuit Respect Mother Earth	Canoes Snowshoes Popcorn Pumpkins Fishhooks Chocolate Maple Sugar Umbrellas Mirrors Shovels Jackstraws Cat's Cradle	**LITERACY:** Interactive storytelling sessions on FNMI legends. **NUMERACY:** Make popcorn strings, count and share new in-class learning on FNMI Nations. **SCIENCE:** Create paintings of Mother Earth and relay the FNMI teaching. **SOCIAL STUDIES:** Read Aloud on maple sugar and maple syrup as an FNMI gift. **THE ARTS:** Decorate pumpkins and share the origin of this FNMI innovation.

* This child development information from: Calgary and Area Child and Family Services. "Developmental Stages for Children/Youth." <www.calgaryandareacfsa.gov.ab.ca/home/index.cfm>.

Source of table: Toulouse, Pamela Rose. "A Truthful Narrative: Bringing First Nations, Métis and Inuit Contributions to the World into the K–12 Curriculum." *Education Canada* 54.3 (Summer 2014): n. pag. Table available on the Canadian Education Association (CEA) website at <http://cea-ace.s3.amazonaws.com/media/CEA-2014-Ed-Can-V54-No3-toulouse-tables.pdf> (19 Nov. 2014). Content on <www.cea-ace.ca> is licensed under a non-exclusive Creative Commons Attribution Non-Commercial No Derivatives License. License Deed at <http://creativecommons.org/licenses/by-nc-nd/2.5/ca/>.

The Landscape of Literacy with Information and Communication Technology

Literacy with information and communication technology (ICT) means thinking critically and creatively, about information and about communication, as citizens of the global community, while using ICT responsibly and ethically.

Integration of Literacy with Information and Communication Technology

Rationale

You plant and nurture many of the seeds of literacy with ICT within your Kindergarten classroom. These seeds may seem to have little to do with technology right now, but they grow into critical and creative thinking and ethical and responsible use of ICT later in a child's life. Literacy with ICT finds its way across the curriculum through inquiry. The **big ideas** outlined in the *Developmental Continuum for Literacy with ICT* are congruent with inquiry, as described in several Manitoba curricula and within this document.

The big ideas in literacy with ICT are:

- Plan and Question
- Gather and Make Sense
- Produce to Show Understanding
- Communicate
- Reflect

(continued)

Integration of Literacy with Information and Communication Technology

Organization of Literacy with ICT in Kindergarten

When you plant and nurture the seeds of literacy with ICT, children will grow strong roots.

With the seeds of	Children grow the strong roots they need to
■ *empathy, respect, understanding, and celebration of all our differences*	■ learn to care for one another, and develop empathy and compassion ■ become less likely to take part in or be bystanders to bullying and cyberbullying, and more likely to be advocates and participants in social justice initiatives
■ *communication skills, such as social and emotional learning and conflict resolution*	■ communicate feelings and needs constructively and help lessen the miscommunications and negative interactions that often occur through online communications during the preteen/teenage years
■ *respect for and appreciation of work and effort done by others*	■ develop awareness and understanding of authorship of intellectual property, copyright, plagiarism, and the importance of acknowledging the work of others
■ *self-awareness and metacognition of strengths and weaknesses and how to learn*	■ become self-regulating, confident, lifelong learners who can find resources/information and create relationships/learning networks they need to navigate through the Kindergarten to Grade 12 landscapes and beyond
■ *inquiry, exploration, questioning, wondering, and experimenting*	■ develop skills in critical thinking (judging information for accuracy, relevance, credibility, fairness, and bias of information), creative thinking, problem solving, inventing, designing, creating, generating ideas, and exploring diverse approaches
■ *wonderment and love of nature, animals, and our world*	■ work creatively toward a sustainable world

ICT Literacy-Rich Learning Environment

Many technological devices provide a tactile experience and a simple interface for children to engage with as they use the devices.

- Interactive whiteboards and touch-screen tablets can provide resources that allow for interactive exploration and discovery opportunities for children.
- Digital cameras come in sturdy versions so that young children may use them.
- Programmable robots are available for children to learn about the rudiments of programming, such as command sequencing and problem solving.

Technology should be available to children on a "just in time, just enough" basis. With more and more devices available to children in the classroom, there is less need to make use of computer labs or to have all students working on the same task at the same time. Instead, children may have access to a variety of technologies, such as tablets, digital cameras, voice recorders, and computers, to assist them in whatever learning experience they are working through.

Infusing Literacy with ICT into the Kindergarten Classroom

Two friends work together on the class computer.

As emphasized throughout this document, a strong Kindergarten learning program intentionally incorporates learning materials that support the concepts of children's interaction with their environment and with each other through exploration, discovery, and play. The sand table, the water table, the block centre, the dramatic play centre, and a variety of other learning centres are integral parts of the learning process in the Early Years, so why not literacy with ICT?

Most young children today have opportunities to interact with technology long before they enter your Kindergarten classroom. They may have programmable toys and electronic games available to them at home, or at a library, grocery store, bank, or restaurant. Many children also have access to a computer/laptop or a touch-screen mobile device in their homes. Many Kindergarten children are confident users of many kinds of digital devices, and are also consumers and producers of a wide range of media resources in both low-tech and high-tech forms. Children can create stories, illustrate them, add music or special effects, tell their stories in their own voice, email stories to their parents, or print them. Children can collaborate on the creation of a class DVD about the alphabet, prepare a PowerPoint presentation about their inquiry, draw themselves as part of a drawing on an interactive whiteboard, add content to their classroom website, Skype with friends in another town or another country, use the digital camera to document their own learning, and so much more.

How should this technology be infused practically into an Early Years classroom? As with any other piece of equipment, the use of technology will depend on your own attitudes, imagination, and organizational variables. All teachers bring their own experience, knowledge, and wisdom into play as they model and guide their students in the critical and creative thinking and ethical and responsible use of ICT.

Before you incorporate any ICT learning experience into your classroom, consider whether it will provide the most appropriate and most effective avenue for meeting the learning outcomes you want to address. Reflect on whether the learning experience will

- foster interaction between children and your learning environment
- encourage exploration and discovery
- enhance or augment ongoing inquiry

Children use tablets with developmentally appropriate software during choice time.

As you observe the individual children in your classroom, watch for how children respond to each specific learning experience. If the equipment and the activities incorporating the equipment are of value, you can work out the implementation logistics. When assessing the use of the technology in this frame of reference, remember the multiple dimensions to consider, such as the technology itself, the amount and type of access the children have to the technology, and the ways in which the children are using the technology to enhance/extend their learning.

How do you choose which applications/software to use in your Kindergarten classroom? Here again, as in selecting any resource to be used within the classroom, you must make some pedagogical choices. The applications/software must reflect the goals and objectives of your Kindergarten learning program and afford a dimension of learning consistent with the concepts of exploration, discovery, and play. This being the case, many types of software should be avoided. Drill and practice software is highly inappropriate in your classroom. Tutorial programs that teach a particular concept and then evaluate the child's understanding of that concept also have little place in an Early Years environment. Children should be creators, collaborators, communicators, and critical thinkers through technology infusion, rather than passive consumers of games and applications.

Children should be creators, collaborators, communicators, and critical thinkers through technology infusion, rather than passive consumers of games and applications.

Use technology to support inquiry and open-ended learning (as children plan and question, gather and make sense, show their understanding, communicate, and reflect upon their learning). For example, video-conferencing software is a tool that may aid in inquiry-based learning, gathering information, developing oral language skills, building community and connection, and so on (as shown in the vignette Little Hands, BIG World earlier in this chapter). An important guideline for selecting applications is that the child has control over the technology and that the application is not a glorified worksheet. Many applications simulate experiences that the child could have with concrete materials. Remember that the device itself is not designed to eliminate these experiences, but is intended to offer new avenues of learning and to afford the child another medium through which to explore and create.

Place any interactive whiteboard at child level instead of at adult level. Make it accessible to the children. Some teachers make the whiteboard one of the play centres available during choice time. They even make it one of the daily jobs that students take turns being responsible for as the leader for that centre. The leader might choose the games that will be played, start the games, facilitate turn taking by peers as they play, problem solve as needed, and close down the games and make sure everything is back in its place when done. The whiteboard not only offers learning to the children playing the games, but also gives the designated student leader the opportunity to take on the leadership role and experience some of the responsibilities that go along with that role.

Have digital cameras available and stored in cases with an easy check-out/check-in system so that children have easy access to a camera during their learning.

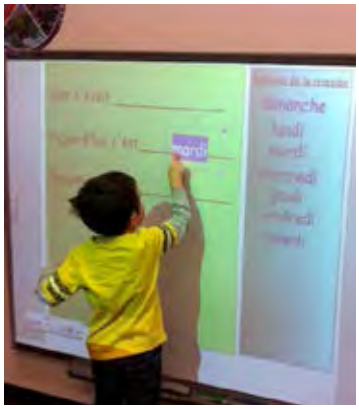
Using Technology to Enhance and Extend Learning

Teachers are currently infusing technology to support learning in their Kindergarten classrooms in a variety of ways and for a variety of purposes, such as the following:

- **Create relationships and provide authentic audiences:** Connect and collaborate with other classes and people within the community/city and/or around the world to co-learn and teach each other and to share the learning. Get involved in global or local online projects using the Skype video-conferencing application or another synchronous tool to communicate live. Teachers might also use a microblogging tool such as Twitter for shared writing, communicating, and sharing student work with a real audience.
- **Document learning, inquiry, and scientific process:** Use a digital camera or a device with a camera to record images, audio, and/or video of children's learning. Students can also document their own learning to show a process or express what is important to them in the learning.
- **Create storytelling and storybooks:** Children can write stories, or you may scribe their stories for them. They can create illustrations for their stories (whether online or offline, and then take a picture) and put their stories together as videos with animation and music, in a slideshow, or in a bookmaking application and have it printed. Applications such as Draw and Tell, Book Creator (for a tablet), and Storybird (website) are available for collaborative storytelling.
- **Assist with classroom routines and procedures and communication with parents:** Use technology, such as a digital calendar, interactive whiteboards at learning centres, and a classroom web page (e.g., a Facebook page, a blog, a wiki), to aid in classroom procedures and routines and to enhance communication with families.
- **Develop a personal professional learning network:** Educators may connect, collaborate, and share using social networking technology (e.g., #Kinderchat or #mbkteachers on Twitter) and by participating in online professional learning offered through webinars or online courses.

- **Model, model, model:** Model critical thinking whenever you access information using technology, model creative thinking as you problem solve or create something new using technology, and model ethics and responsibility as you communicate using technology and whenever you access the work of others using technology. Children learn so much from how we behave and what we do and say. It is never too early to discuss being a good digital citizen with your students.

Many vignettes throughout this document share ways teachers infuse technology into the curriculum in their Early Years classrooms.



(L) Calendar time can be facilitated through the use of an interactive whiteboard.

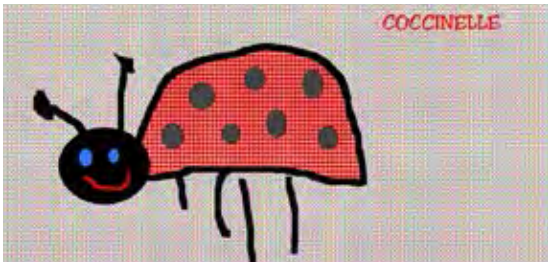
(R) Using *The Very Hungry Caterpillar* (Carle) motif, children retell the familiar story using the interactive whiteboard (similar to the way a flannelboard story might be used for retelling a story children know well).

(L) Children practise counting by 5s using a feature on the interactive whiteboard. When they are correct, the number lights up green.

(R) Junior Kindergarten children in a rural school Skype with friends in a Winnipeg Kindergarten, sharing their mutual interest in birthday party play with the help of their collaborative teachers. The Kindergarten class holds up a chart of what they need for their dramatic play centre.

(L) Before the children try out a new art technique, the teacher introduces the work of artist Georgia O'Keefe, famous for her extreme close-ups of flowers, using chalk and blending.

(R) Later, the children try out the use of chalk and various blending tools, including their fingers.



Notre Abécédaire: A Français Kindergarten class created and starred in their own DVD of the alphabet, working with multiple representations, manipulating concrete materials, developing written language, and enhancing oral language. Each family received a copy of the DVD at the end of the project, a wonderful souvenir.

The Landscape of Diversity Education and Inclusion

Diversity education is about exploring diversity and equity issues and supports the integration of diversity and equity education throughout the curriculum, classroom, and school. To respond to diversity, use *inclusion* as your navigational tool to ensure that all children feel valued, have friends, and feel they belong in their Kindergarten classroom.

Integrating Diversity Education and Inclusion

Rationale

The reality of living in a diverse and pluralistic society, regardless of one's origins and social contexts, necessitates that young learners have the opportunity to experience schooling that is culturally appropriate and relevant, encourages social caring and inclusion, and challenges prejudice and discrimination.

Organization of Diversity Education and Inclusion in Kindergarten

Belonging, learning, and growing are key themes in diversity education from Kindergarten through Grade 12.

(continued)

Diversity and Inclusion-Rich Learning Environment*

An environment that promotes diversity and inclusion reflects certain essential characteristics:

- **Grounded in the lives of children:** Good teaching begins with respect and concern for students, their innate curiosity, and their capacity to learn. The Kindergarten curriculum needs to be rooted in the real lives and contexts of the children in your classroom. Creating effective learning environments requires that the lives of the children, as well as the topics they explore, provide the content of the classroom experience. Your students need opportunities to consider and inquire how their lives connect to the broader society.
- **Culturally sensitive:** Classrooms that are places for critical teaching and learning are built on the premise that teachers "don't know it all." Each new class presents opportunities for you to learn from the children, and requires you to be a good researcher and listener as you co-construct learning together. As you work with children of diverse cultural origins and ethnicities, you may call upon families, your colleagues, and other community resources in order to understand and meet children's needs and for insights into the communities you serve.
- **Equity-focused and anti-biased:** A Kindergarten curriculum grounded in social justice and awareness of social diversity is inclusive of every child in your class. With our increasingly diverse student population and nation, your Kindergarten classroom needs to directly address issues related to race, class, gender, and other aspects of educational equity. We need to do more than simply "celebrate" diversity. We may take on the "hard stuff" of exploring why some differences translate into wealth and power, while others become the basis for discrimination and injustice. We can intentionally include the experiences and voices of First Nations, Métis, and Inuit peoples, people of colour, women, and other diverse groups in our society.
- **Critical:** The Kindergarten curriculum helps equip children to engage in dialogue and to challenge the world. Children need to develop skills and insights that allow them to pose essential questions.
  - Who holds power and makes decisions in society? Who is left out?
  - Who benefits and who suffers?
  - What is fair practice? What is discriminatory or unfair practice?
  - How is change created?

  Children should have opportunities to examine and question social reality. Wherever possible, learning should encompass issues and problems in the world outside the Kindergarten classroom walls.
- **Participatory and experiential:** To help ensure that children are not passive learners, use exploratory and experiential learning approaches in which children are involved in planning and decision making. Learning experiences that involve children physically and cognitively can provoke their democratic capacities: to question, to challenge, to make real decisions, and to solve problems collectively.
- **Hopeful, joyful, caring, and visionary:** Classrooms in which students feel significant and cared for are at the heart of an inclusive school. Unless your students feel safe—emotionally and physically—they will not reveal their true selves or their real thoughts and feelings, and discussions will be artificial and dishonest. Design learning experiences that help your students learn to trust and care for each other (and you).
- **Authentic:** An inclusive classroom focused on social justice provides children with the skills they need to navigate the world, and to take action to change the world. When young learners create products for real audiences about significant issues, and discuss big ideas with compassion and intensity, academics come to life.
- **Supportive of students as social activists and engaged citizens:** To help children see themselves as voices for justice and agents of change, encourage them to critique the world, take a stand, and act in ways that are meaningful. Part of your role is to reinforce the fact that ideas have real consequences and need to be acted upon. Children may draw inspiration from historical and contemporary individuals who struggled for social justice, peace, and human rights. A critical curriculum and classroom reflects the diversity of people from all cultures and both genders who acted to make a difference, many of whom did so at great sacrifice.

* Source: "Rethinking Our Classrooms: Teaching for Equity and Justice." *Rethinking Schools* 18.1 (Fall 2003). Available online at <www.rethinkingschools.org/ProdDetails.asp?ID=RTSVOL18N1> (3 Feb. 2015). Adapted with permission.

Creating Inclusive Kindergarten Classrooms

Developmentally, many Kindergarten children are particularly moved by what is "fair" and "right" and inspired by actions taken by Canadian heroes, such as Terry Fox. There can be many teachable moments during which children are ready to learn about and discuss inequity and to reflect critically on stories they have read, movies they have seen, or things they have heard people say, and to begin to challenge those ideas. For example, stories that portray females as being in need of rescue, such as Cinderella or Sleeping Beauty, might be countered through the introduction of other fairy tales, such as Robert Munsch's *The Paper Bag Princess*, to challenge stereotypes that females are the weaker or less powerful gender.

Developing Cultural Competence

- Get to know families whose children attend your Kindergarten. Where do they live? What is the neighbourhood or community like? Where do families gather (e.g., the hockey rink, the family centre, places of worship)?
- Engage in real conversations with families. What are their strengths? How do they celebrate family milestones? What are their holiday customs? If they are newcomers to this province, how did they come to Manitoba? How can their hopes and dreams for their children, their family history, and their customs enrich your day-to-day curriculum?
- Reflect on your own biases, assumptions, values, and beliefs when you encounter difference. Commit to learning more about the Treaty Education Initiative (Treaty Relations Commission of Manitoba). Keep in mind that "by placing yourself in situations that cause a sense of cultural disequilibrium, you can better understand how the children and their families feel when they come to school" (Colombo 6).
- Expand your knowledge base and form a professional learning community with other teachers in your school or school division. Read about other cultures and belief systems and select educational books that recognize and celebrate differences in young children. (For suggested resources, see Continue Your Learning at the end of this chapter.)

At one school, children were asked to bring a food item to help create several hampers for the Christmas Cheer Board. Kindergarten children were excited to contribute their cans of soup and boxes of pasta, and each day children counted and rearranged the growing pile of items in "their" box. One child asked, "Why are some people hungry?" This innocent question sparked an inquiry with a rich social/cultural/historical learning context (Why are children hungry in the world?). It led to many conversations about the cost of food (further explored in the dramatic play centre where a grocery store was set up) and about food being wasted in the classroom during snack, when too many uneaten snack items ended up in the trash. Building on an earlier social studies exploration about needs, the teacher pointed out that people who work can still be poor if their jobs do not pay them enough to buy food and other necessities for themselves and their families. Children showed personal responsibility by contributing to the hamper, but also social action as they began to explore why people are hungry and how they could help to solve root causes. They determined to write a letter to the mayor that declared, "No kids should go to bed hungry!"

In another class, an argument broke out when girls wanted to use unit blocks in the centre where a group of boys were already busy building. One boy was especially adamant that the blocks were boys' toys and the girls could not play. The teacher recognized this opportunity as a teachable moment to introduce the idea of gender stereotyping and bias. During whole-group time, children discussed whether there were, in fact, "boy" and "girl" toys in the classroom, and, to the teacher's dismay, it became clear that more than a few children believed this to be true. Blocks, balls, and trucks apparently belonged to boys, while the kitchen, the dolls, and the art centre were the girls'.

Later, the teacher looked at her classroom with new eyes, reflecting on how she could intentionally create a more gender-neutral classroom through the choice of colours, room arrangement, and types of materials children encountered. (See Chapter 5 for more discussion about how to design the learning environment.)

Creating inclusive classrooms that encourage critical thinking is complex and demanding work that requires vision, support, and resources. Shared experiences with other educators, support networks, and collections of diverse resources are critical components of inclusive Kindergarten classrooms.

As a teacher, you have the opportunity to design learning environments that stimulate, extend, and expand children's natural curiosity. When you are successful, children develop their physical perception and skills; deepen awareness of self and community; gain knowledge; enhance problem-solving skills; and develop critical and imaginative thinking within rich contexts for inquiry, meaning making, and communication. These developmental outcomes can be facilitated through less formal learning experiences, such as having children work together to create salt-dough clay. Their collaboration provides an inclusive, participatory, and experiential learning opportunity, meeting important inclusion and diversity goals, while also meeting English language arts, mathematics, and science learning outcomes.

Children create salt-dough clay.

A longer, more intentionally focused inquiry path designed around the theme of trees will tap a child's natural curiosity about the world and may be integrated as part of an investigation of trees and wooded areas in the local community. Children might explore and reflect on the importance of natural spaces, the need for other living things to have trees as habitats, and how trees in their community contribute to the well-being of people. Seasonal changes in trees are a natural starting point for an exploration of other changes that take place in the community throughout the year.

In the fall, children may be very curious about why colour changes take place among various trees and plants, and this inquiry might be integrated as a way to describe and represent seasonal changes in their community's decor. Paper may be used as a medium to create a representation of an ideal community (such as a diorama), or children might explore the characteristics of different kinds of paper to determine which is best suited for the representations they create. Perhaps most importantly, children play among the leaves and trees, and so it should be commonplace for them to realize eventually that paper from trees is a renewable resource that need not mean the end of trees. Trees can be described as living places that are full of life, that cleanse the atmosphere of certain unpleasant things, and that need to slumber in winter to make all things new in spring.

Vignette: Kindergarten Celebrates the Seasons*

The following vignette is an example of an integrated project-based approach to the curriculum and of family engagement in children's learning. It illustrates how children's questions about the natural world were used as the basis for designing learning encounters that bring together a number of subject areas and perspectives. Children explored multiple aspects of their learning landscapes, made meaning and connections, and communicated their feelings and learning in a variety of ways.

One Kindergarten class took part in an extended study with a rich imaginative and communicative learning context. Children learned about paper, trees and colours (science), measuring, estimating, and recording (mathematics), drawing and painting (visual arts education), experiencing poetry and writing about their learning (English language arts), using technology to support learning (ICT), caring for trees (ESD), and more. The children's inquiry encouraged intergenerational learning, as they needed to connect with their families along the way.

As the Kindergarten class had been busy celebrating the seasons, the class adopted trees outdoors and the children used digital cameras to photograph trees as a whole, as well as their various interesting parts. Some children had their families take photos of them in front of their favourite tree, which might have been at home, at their grandparents' homes or cottages, or at a nearby playground. This helped to make connections between children's lives at home and at school, and involved families in their children's learning. Other children had their photos taken in front of a favourite tree adjacent to or in the schoolyard. The children's own photos in front of "their" own trees were prominently displayed, and demonstrated the home-school connection.

Children's photos of themselves with "their" trees.

Children measured the circumference of their trees with yarn, and then later measured the length of the yarn with Unifix cubes. They recorded their guesses about the circumference of their trees, and then their actual findings. This learning experience helped children to deepen their numeracy understanding through the use of manipulatives. It also provided opportunities to practise estimating and helped children to create links among concrete, pictorial, and symbolic representations of mathematics. The teacher used and promoted mathematics language in the school and classroom and promoted joy and enthusiasm for mathematics.

Seasons

The Cree of Northern Manitoba recognize six seasons, including breakup, which occurs between spring and summer, and freeze-up, which occurs between fall and winter.

* Used with permission of a Kindergarten teacher.

(L) A chart of children's brainstorming about trees. (R) Books about trees were added to the science centre.

The children also did their own bark rubbings and sketches during their fall visit. All the photographs, measurements, rubbings, and sketches were kept in a Tree Book. The science centre had many interesting "tree" materials for the children to explore, including birchbark, pieces of a branch, and a trunk on which children could clearly see rings, pine cones, nests, and so on. Books about trees were placed in the science centre to support children's investigations further.

During the children's shared writing time, their teacher encouraged brainstorming about the many things they appreciated about trees, while charting their ideas to extend the children's learning.

In Kindergarten, children make meaning before, during, and after viewing, listening, and reading a variety of oral, literary, and media texts. They also communicate their own understanding through representing, speaking, and writing with others. Throughout this project, Leo Lionni's book *Frederick* was read as a way of celebrating the seasons and seasonal changes. Children especially enjoyed the way Frederick vividly describes how the seasons are controlled by four mice: the Springmouse who makes the rain, the Summermouse who colours the flowers, the Fallmouse who harvests the nuts and grains, and finally the Wintermouse who has small cold feet.

As discussed in earlier chapters, teaching holistically and in an integrated manner is the process used within the Reggio Emilia approach where

> the arts are integrated into the school program as problem-solving activities, rather than as discrete subjects or disciplines taught for their own sake. . . . Children's art making is emphasized to reinforce concepts, and their art products are considered to represent aspects of their learning. Visual arts are seen as an additional "language", one in which the children's ideas and concepts are expressed in art media. (Edwards, Gandini, and Forman, as cited in Thompson 61)

Using a number of paint techniques, the Kindergarten class painted a tree in every season, exploring texture, colour, and various paint techniques.

Once the seasons were complete, the children finished this project by writing the words "Winter, spring, summer, fall, we love them all!" The children's art encouraged *individual expression* and was beautifully displayed in the classroom at the children's height, showing respect for their work.

Children's tree art is beautifully displayed.

Seedlings are cared for by the children in anticipation of planting them in the spring.

The Kindergarten children also received small seedlings from the Manitoba Forestry Association, nurtured them carefully, and took them home for planting with their families in the spring. This particular learning experience infused the ESD theme of concern for all living things in our environment into this extended inquiry.

The learning about trees addressed a number of specific Kindergarten learning outcomes across a number of subject areas and shows how playful learning, inquiry, and extended projects can integrate across subject areas in a coherent, meaningful way.

Reflection: Learning Outcomes and Integratables

As you reflect on the above vignette, consider questions such as the following:

- Which specific learning outcomes from the Kindergarten curricula have been addressed in this vignette?
- Which integratables have been woven in?

Summary

In this chapter, you considered how integratable elements of learning can infuse the learning unfolding in your play-based Kindergarten classroom. In Chapter 10, the final chapter in this document, you will learn about how Manitoba's Kindergarten teachers collaborate with colleagues in their schools, with children's families, and with members of the early childhood education community to scaffold upon children's prior learning experiences at home and/or in early learning centres and to align pedagogical approaches as far as possible. Community involvement and family connections are essential to providing quality learning environments for young children. In the final chapter, you will also think more deeply about partnership approaches with personnel in your own school, and how to create seamless transitions for young learners as they move from preschool into Kindergarten and then on to Grade 1.

Continue Your Learning

Education for Sustainable Development Resources

- The Child & Nature Alliance of Canada. Home Page. <www.childnature.ca> (21 Nov. 2014).
- Children & Nature Network. Home Page. <www.childrenandnature.org> (21 Nov. 2014).
- Forest School Canada. *Forest and Nature School in Canada: A Head, Heart, Hands Approach to Outdoor Learning*. Ottawa, ON: Forest School Canada, June 2014. Available online at <www.forestschoolcanada.ca/wp-content/themes/wlf/images/FSC-Guide_web.pdf> (13 Feb. 2015).
- ———. Home Page. <www.forestschoolcanada.ca> (21 Nov. 2014).
- FortWhyte Alive. Home Page. <www.fortwhyte.org> (21 Nov. 2014).
- ———. "Naturescape for Educators." *For Educators*. <https://www.fortwhyte.org/foreducators/teacherpd/naturescape-for-educators/> (21 Nov. 2014).
- ———. "Outdoor Educator." *For Educators*. <https://www.fortwhyte.org/foreducators/teacherpd/outdoor-educator/> (21 Nov. 2014).
- Manitoba Nature Summit. *Manitoba Nature Action Collaborative for Children*. <www.naturesummitmb.com/tag/manitoba-nature-action-collaborative-for-children/> (21 Nov. 2014).
- Oak Hammock Marsh Interpretive Centre. Home Page. <www.oakhammockmarsh.ca> (21 Nov. 2014).
- ThinkTrees Manitoba Forestry Association. *Nature Trails*. <www.thinktrees.org/Nature_Trails.aspx> (21 Nov. 2014).
- Woodland Trust Nature Detectives. *Packs*. <www.naturedetectives.org.uk/packs/> (21 Nov. 2014).
- World Forum Foundation. *Nature Action Collaborative for Children*. <www.worldforumfoundation.org/working-groups/nature/> (13 Feb. 2015).

First Nations, Métis, and Inuit Perspectives Resources

- Manitoba Education and Youth. *Integrating Aboriginal Perspectives into Curricula: A Resource for Curriculum Developers, Teachers, and Administrators*. Winnipeg, MB: Manitoba Education and Youth, 2003. Available online at <www.edu.gov.mb.ca/k12/docs/policy/abpersp/> (17 Jan. 2014).
- Treaty Relations Commission of Manitoba. "K–12 Treaty Education Continuum, 2013–2014." *Treaty Education Initiative*. <www.trcm.ca/treaty-education-initiative/k-12-treaty-education-continuum/> (13 Feb. 2015).

  This website offers treaty education teacher guides and resources, including specific suggestions on how to infuse learning about treaties into the Kindergarten Social Studies curriculum.

Literacy with Information and Communication Resources

- Campaign for a Commercial-Free Childhood (CCFC), Alliance for Childhood, and Teachers Resisting Unhealthy Children's Entertainment. *Facing the Screen Dilemma: Young Children, Technology and Early Education*. Boston, MA: Campaign for a Commercial-Free Childhood; New York, NY: Alliance for Childhood, Oct. 2012. Available on the CCFC website at <www.commercialfreechildhood.org/sites/default/files/facingthescreendilemma.pdf> (17 Jan. 2014).
- Caring for Kids: Information for Parents from Canada's Paediatricians. "How to Promote Good Television Habits." *Growing and Learning*. Canadian Paediatric Society. <www.caringforkids.cps.ca/handouts/promote_good_television_habits> (21 Nov. 2014).
- Companies Committed to Kids: Long Live Kids! Home Page. <www.cca-kids.ca/> (21 Nov. 2014).
- Levin, Diane E. *Beyond Remote-Controlled Childhood: Teaching Young Children in the Digital Age*. Washington, DC: National Association for the Education of Young Children, 2013.
- Manitoba Education and Advanced Learning. *Literacy with ICT Across the Curriculum*. <www.edu.gov.mb.ca/k12/tech/lict/index.html> (13 Feb. 2015).
- Media Smarts: Canada's Centre for Digital and Media Literacy. Home Page. <http://mediasmarts.ca/> (21 Nov. 2014).
- National Association for the Education of Young Children, and the Fred Rogers Centre for Early Learning and Children's Media at Saint Vincent College. *Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8*. Joint Position Statement. Jan. 2012. <www.naeyc.org/content/technology-and-young-children> (26 Aug. 2013).

Diversity Education and Inclusion Resources

- British Columbia Ministry of Education. "Kindergarten to Grade 3." *Making Space: Teaching for Diversity and Social Justice throughout the K–12 Curriculum*, 2008. 19–27. Available online at <www.bced.gov.bc.ca/irp/program_delivery/making_space/mkg_spc_k3.pdf>. The full document is available at <www.bced.gov.bc.ca/irp/pdfs/making_space/makingSpace_full.pdf> (21 Nov. 2014).
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- Derman-Sparks, Louise, and Julie Olsen Edwards. *Anti-Bias Education for Young Children and Ourselves*. Washington, DC: National Association for the Education of Young Children, 2010.

- Media Smarts: Canada's Centre for Media and Digital Literacy. "Find Lessons and Resources." *Teacher Resources.* <http://mediasmarts.ca/teacher-resources/find-lesson> (21 Nov. 2014).
- New South Wales (NSW) Education and Communities. *Prejudice. No Way! Anti-Prejudice Activities for Years K–3.* 2012. <www.prejudicenoway.com/> (21 Nov. 2014).
- Teaching for Change. "Early Childhood." *Anti-Bias Education.* <www.tfcbooks.org/best-recommended/earlychildhood> (21 Nov. 2014).
- Wood, Jeffrey W. "Moses's Story: Critical Literacy and Social Justice in an Urban Kindergarten Program." *Voices of Practitioners.* National Association for the Education of Young Children. <https://www.naeyc.org/files/naeyc/file/vop/VoicesWood.pdf> (21 Nov. 2014).