

Chapter 8:

**Play throughout the
Kindergarten Curriculum**

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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.

Kindergarten Curricula at a Glance: Snapshots of the Core Curricular Areas



Chapter 7 offered you the opportunity to wander and wonder through the learning landscapes, reflecting on how this metaphor can support your role as a teacher of young children (refer to Figure 8.1). Chapter 8 provides snapshots of the core curricular areas, with many rich examples of play throughout the curriculum, and useful teaching strategies shared by provincial curriculum consultants and classroom teachers.

Figure 8.1: A Child's Multiple Ways of Knowing within the Learning Landscapes

Snapshots are provided for the following Kindergarten subject areas:

- arts education
- English language arts
- mathematics
- science
- social studies
- physical education/health education
- English as an additional language

Each snapshot provides a description/overview of the subject area curriculum, gives the rationale for its importance, explains the organization of the curriculum, discusses what a curriculum-rich learning environment looks like in Kindergarten, and lists resources for the respective subject areas.

You can access detailed general and specific learning outcomes for each subject area at the following website:

Manitoba Education and Advanced Learning. *Curriculum/Subjects*.
<www.edu.gov.mb.ca/k12/cur/index.html> (12 Nov. 2014).

The Manitoba English language arts curriculum is currently being renewed. You can access information and processes for reflecting on the new curriculum in the group Reflecting on and Moving Forward with a New English Language Arts Curriculum at the following website:

Manitoba Education and Advanced Learning. *Manitoba Professional Learning Environment (Maple)*. <www.mapleforem.ca/> (20 Nov. 2015).



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Arts Education Landscapes: Dance, Drama, Music, and Visual Arts

The dance, drama, music, and visual arts curriculum philosophy and learning outcomes are represented by the image of a butterfly. The butterfly serves as a metaphor and as a graphic organizer for transformative learning in the arts. Students perceive the world and make and communicate meaning through active dance, drama, music, and visual arts learning experiences that integrate the four butterfly wings or essential learning areas of the four arts. Students learn and use different arts tools and language to make and create dance, drama, music, and/or visual arts works. Students explore the roles, purposes, and meanings of the arts in their own lives, in the lives of their families, and in their communities. As students wander through the arts education landscapes, they question, analyze, reflect on, and construct personal meaning about the arts, while building personal identity and relationships with others.

Kindergarten Curriculum at a Glance: Arts Education: Dance, Drama, Music, and Visual Arts



Rationale

The arts are a vital part of every student's education. They engage children's bodies, minds, and spirits, and provide new ways of seeing the world. Through arts education, students develop multiple, unique, and powerful ways of interpreting, knowing, representing, and communicating understandings about themselves and the world around them. Students have opportunities to be creative, explore ideas and feelings, use their imagination, think critically, and work with others. Arts education helps students become creative adults and citizens who will enrich their own lives and the lives of their future communities.

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Kindergarten Curriculum at a Glance: Arts Education: Dance, Drama, Music, and Visual Arts

Organization of Kindergarten Arts Education

The dance, drama, music, and visual arts curriculum frameworks are organized into **four essential learning areas**:

- **Language, Tools, and Performance Skills:** Children develop understanding of and facility with arts concepts, skills, techniques, elements, and forms of dance, drama, music, and/or visual arts.
- **Creative Expression:** Students collaboratively and individually generate, develop, and communicate ideas in creating and performing art works for a variety of purposes and audiences.
- **Understanding the Arts in Context:** Children connect to contexts of time, place, and community, and develop understanding of how the arts reflect and influence culture and identity.
- **Valuing:** Students analyze, reflect on, and construct meaning in response to their own and others' art works.

Each essential learning area in each of the arts is further delineated by a set of three or four general learning outcomes, which are further described by sets of specific learning outcomes.

Learning Environment

Arts education learning environments provide opportunities for young learners to work and play individually and together to pursue inquiry in the arts. Learning in the arts is enhanced by rich environments that include space to dance, make music, and participate in drama and visual arts learning experiences, and by instruments and arts resources, such as small percussion instruments, props for dramatic play and dance, and a variety of visual arts media. (See Chapter 6.)

Curriculum Resources

- Manitoba Education. *Kindergarten to Grade 8 Dance: Manitoba Curriculum Framework of Outcomes*. Winnipeg, MB: Manitoba Education, 2011. Available online at <www.edu.gov.mb.ca/k12/cur/arts/dance/framework_k-8.html> (19 Jan. 2015).
- . *Kindergarten to Grade 8 Drama: Manitoba Curriculum Framework of Outcomes*. Winnipeg, MB: Manitoba Education, 2011. Available online at <www.edu.gov.mb.ca/k12/cur/arts/drama/framework_k-8.html> (19 Jan. 2015).
- . *Kindergarten to Grade 8 Music: Manitoba Curriculum Framework of Outcomes*. Winnipeg, MB: Manitoba Education, 2011. Available online at <www.edu.gov.mb.ca/k12/cur/arts/music/framework_k-8.html> (19 Jan. 2015).
- . *Kindergarten to Grade 8 Visual Arts: Manitoba Curriculum Framework of Outcomes*. Winnipeg, MB: Manitoba Education, 2011. Available online at <www.edu.gov.mb.ca/k12/cur/arts/visual/framework_k-8.html> (19 Jan. 2015).

Implementation Resources: Pictures of Practice

- Manitoba Education and Advanced Learning. *Dance Pictures of Practice (Kindergarten to Grade 8)*. <www.edu.gov.mb.ca/k12/cur/arts/dance/practice.html> (19 Jan. 2015).
- . *Drama Pictures of Practice (Kindergarten to Grade 8)*. <www.edu.gov.mb.ca/k12/cur/arts/drama/practice.html> (19 Jan. 2015).
- . *Music Pictures of Practice (Kindergarten to Grade 8)*. <www.edu.gov.mb.ca/k12/cur/arts/music/practice.html> (19 Jan. 2015).
- . *Visual Arts Pictures of Practice (Kindergarten to Grade 8)*. <www.edu.gov.mb.ca/k12/cur/arts/visual/practice.html> (19 Jan. 2015).

Making Meaning

Kindergarten children experiment with ways to express themselves creatively and begin to develop skills and knowledge in one or more of the arts. They explore the questions “who,” “where,” “when,” and “why” related to the arts. They think about the importance and meaning of the arts in their own lives, and in the lives of their families and communities. Children learn to think critically and talk about their experiences with learning in the arts. Every Kindergarten student deserves to know the joys of dance, drama, music, and visual arts and to learn in and through active, authentic arts experiences. Dance, drama, music, and visual arts are important literacies that give Early Years children a wealth of rich, imaginative tools, resources, and languages for perceiving, for making meaning, and for communicating understandings about the world.

Important conditions for scaffolding children’s learning in the arts include the following (Wright 28–30):

- personally relevant experiences
- quality tools and resources
- sufficient time and opportunities to explore arts learning and media
- deep learning through purposeful exploration of ideas and feelings
- challenging resources to extend arts learning
- opportunities for critical reflection, discussion, analysis, and feedback
- inclusion and facilitation of children’s perspectives
- exploration of elements unique to each arts discipline and ways to make meaningful cross-disciplinary connections
- opportunities to explore aesthetic qualities in children’s worlds
- awareness of the importance of artistic and aesthetic values for all individuals, societies, and cultures
- opportunities for children to discuss the intent as well as the product of the artistic learning

The Learning Landscapes Questions through the Arts

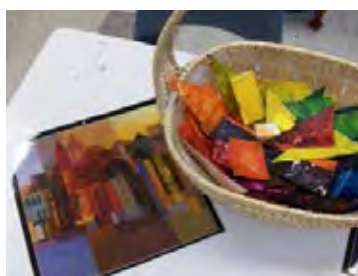


Ways to perceive the world.

How do I perceive the world in multiple ways . . .

The arts “help us learn to notice the world” (Eisner 10) from different perspectives. For example, buildings and people in the children’s community are perceived differently through visual, aural, kinesthetic, and dramatic ways.

Through the arts, children may observe their world closely, using a variety of different lenses and from unique points of view.



Media and opportunities to inspire children to wonder.

I wonder . . .

The arts provide rich media and opportunities for children’s “wandering and wondering” (Short, Harste, and Burke). Provocations or invitations for learning through dance, drama, music, and visual arts foster wondering, excite imagination, stimulate curiosity, and engage the senses, feelings, body, mind, and spirit.

Arts invitations that open new learning spaces and inspire children to wonder might include

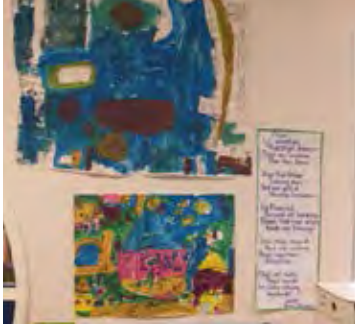
- photographs, art, and artifacts that students can sketch, collage, paint, or sculpt
- artifacts, clothing, and picture books to inspire dramatic play and language
- pictures (e.g., of rain, abstract art, sequence of seeds growing to flowers) for children to “dance the picture,” with or without props, or “play the picture,” with small percussion instruments



Ways of making meaning.

How do I make meaning . . .

The multiple modes of the arts provide a wealth of symbols and symbol systems for making and encoding meaning of the world. When children participate “as artists, in creative making . . . by thinking analytically about artistic processes and products” (Wright 148), the arts become “significant modes for knowing and understanding” (128).



Ways to communicate thinking, understanding, and learning.

How do I communicate my thinking, understanding, learning . . .

The embodied ways of knowing in the arts involve cognitive, physical, emotional, intuitive, and spiritual knowing. Because these modes can be expressed in non-verbal as well as verbal ways, communicating through the arts transcends cultural and language differences, so they are especially powerful for your English as an additional language learners. For example, a child may not yet have the verbal or written skills to communicate understandings about the world, but may be able to paint, dance, act, or sing that learning. The arts allow children to make their thinking and feeling visible to others.



Building identity and relationships with others, with community, and with Earth.

How do I build my identity and my relationships with others, with my community, with Earth . . .

The arts provide powerful affordances to perceive the world in multiple ways, to celebrate diversity and uniqueness, and to discover common values and needs. Through authentic learning in the arts, students “explore ideas and feelings, and develop understandings about their emerging personal, cultural, and social identities” (Manitoba Education, *Kindergarten to Grade 8 Visual Arts 6*).

Learning outcomes in Manitoba’s arts curricula focus on connecting the arts to different contexts of time, place, social groups, and cultures through individual exploration and group collaboration and negotiation. The arts give children a realm of rich, imaginative tools and resources for exploring issues and events in their communities and world.



Ways of using artistic tools and language to communicate understandings about the world.

What do I do with what I know . . .

Using artistic tools and language, students can generate ideas, problem solve, create, and communicate understandings about art and the world. The ways of knowing in the arts can generate transformative learning.

The arts have the potential to “teach new ways of seeing the world and thinking creatively, ultimately toward the goal of preparing a generation of innovative thinkers to address the most pressing problems of our times” (Sheridan-Rabideau 54).



Vignette: Our Class Explores Rockets

One Kindergarten teacher shares the story behind a rocket inquiry that flowed over several days from the socio-dramatic play centre to the puppet stage, to the art centre, and to the interactive whiteboard, engaging children in much building, measuring, problem solving, collaborating, building three-dimensional representations, using new space language, and more.

The intentional teacher understands the importance of socio-dramatic play to children's learning across all developmental domains and in response to many curricular learning outcomes. Comfortable with emergent curriculum, the teacher uses a flexible approach to respond to the children's passionate interest in space and Canadian astronaut Chris Hadfield, and so supports the children at the dramatic play centre.

The Kindergarten teacher describes what unfolded in her classroom as follows:

Anyone learning about space knows you need a rocket in which to explore the solar system. We got the supplies ready, made a plan on the whiteboard, and then set to work as a class. First, we made a big point at the top. Then we put blasters on the side. Mr. J. held up the box so we could see what it would be like. But, no matter how much tape, glue, and staples we used, our rocket would not stand up on its own. All was not lost; we came up with a much better idea in the end. We used our puppet stand as a way to hold up the pointy part and then turned the blasters into four little rockets. Let the space travel begin!



How many children can fit into one rocket?



Children begin by creating their own personal rockets.

Connections to the Arts Education Curricula

This vignette incorporates a number of specific learning outcomes from the arts education curricula.

Drama

In this Kindergarten class, children

- generate and use ideas from a variety of sources such as the Internet and books and create drama through what they learn about Canada's famous astronaut Chris Hadfield, rockets, the solar system, and space travel (K-1 DR-C1.1)*
- create and use play areas for specific play experiences, and use a variety of objects imaginatively for props (K-1 DR-C1.4)
- make decisions, with teacher guidance, about the selection and use of ideas and dramatic elements and forms in their own dramatic play (K-2 DR-C2.1)
- collaborate with others in developing dramatic play experiences (K-4 DR-C2.6)
- contribute ideas that help a dramatic story unfold in play (K-1 DR-C1.3)

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* The specific learning outcomes and codes are identified in the arts education curriculum framework documents.

Connections to the Arts Education Curricula

Visual Arts

Kindergarten children

- engage thoughtfully with artworks from various times, places, and peoples (K–8 A–U1.1)
- use art media, tools, and processes to explore and demonstrate awareness of the elements of art: line, colour, texture, shape, form, and space (K–2 A–L1.1)
- observe, talk about, and use various art media to depict visual details in a wide range of subjects found in images and in life (K–2 A–L3.1)
- draw and paint, demonstrating understanding that lines can depict the edges of observed, recalled, or imagined shapes and forms (K–1 A–L3.2)
- create images and objects in response to ideas derived from a variety of stimuli (K–1 A–C1.1)
- experiment constructively with grade-appropriate art elements and media to create a variety of images and objects (K–1 A–C1.2)
- describe, with teacher guidance, own and others' artworks in terms of subject matter and art elements and media (K–2 A–V2.1)
- prepare own artworks to share with others in a variety of contexts (K–1 A–C3.1)

As part of their space exploration, Kindergarten students enjoyed making different kinds of space art. Their first project was inspired by famous artist Vincent Van Gogh's painting *Starry Night*.

According to their teacher, the Kindergarten students' "next big art project" was inspired by some very silly books about *Aliens in Underpants* by Claire Freedman. In these books, aliens fly down to Earth to steal any kind of underpants they can get their hands on. They even save the world by making a huge pair of underpants to deflect an asteroid coming towards Earth. "The students love these books and loved drawing and painting their very own alien wearing underpants!"



Children use paintbrushes to create their detail.



A child's representation of a starry night.



Children's aliens are on display. Individualized art rather than cookie-cutter products help celebrate children's unique ideas.



Children enjoy the silliness of their drawings about aliens.

Cross-Curricular Connections

In addition to addressing arts education learning outcomes throughout this inquiry, children engage in cross-curricular learning through the integration of

- English language arts (speaking, listening, viewing, representing, reading, and writing through the four ELA practices when using language for sense making, as a system, for exploration and design, and for power and agency)
- mathematics (measuring, predicting, and 3-D objects)
- science (paper and colour explorations)

English Language Arts Landscapes

As children explore the English language arts (ELA) landscapes, they learn language, learn about language, and learn through language in a variety of situations, for a variety of purposes, and with a variety of texts. Through listening, speaking, reading, writing, viewing, and representing, learners develop competency in making meaning of and creating texts to meet personal and academic goals.

Kindergarten Curriculum at a Glance: English Language Arts

Rationale

Language is central to all learning. Through ELA, learners become flexible, reflective, and critical thinkers who are able to interact with complex ideas about themselves, the world, and society. ELA encourages creativity and imagination and provides learning that transfers through and between the other disciplines (or curricular areas).

Through ELA, students

- use the practices of ELA within their learning landscapes as full and active participants
- develop flexible and versatile ways of thinking and using language to meet personal, social, and academic needs
- build a sense of self, identity, community, and the world
- sustain a lifelong sense of curiosity, a passion for learning, and an appreciation of the power and beauty of language and literature

Organization of Kindergarten ELA

The ELA curriculum profiles four big ideas in the form of *practices*—the ways we use language in ELA. When learning in rich, meaningful contexts and play, students need opportunities to use language

- for sense making
- as a system
- for exploration and design
- for power and agency

For more information about these practices, see the group Reflecting on and Moving Forward with a New English Language Arts Curriculum at the following website:

Manitoba Education and Advanced Learning. *Manitoba Professional Learning Environment (Maple)*. <www.mapleforem.ca/> (20 Nov. 2015).

Learning Environment

An ELA-rich learning environment provides opportunities for

- imaginative play and exploration (individual, small group, large group)
- interaction with a range of rich texts (e.g., books, visuals, fiction, non-fiction, poetry, artifacts, digital text, environmental print, music, art)
- imagining and creating texts and ideas using space, materials, resources, tools, and provocations

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Kindergarten Curriculum at a Glance: English Language Arts

Curriculum Resources

Manitoba Education and Advanced Learning. *Manitoba Professional Learning Environment (Maple)*. <www.mapleforem.ca/> (20 Nov. 2015).

The ELA curriculum is currently being renewed. You can access information and processes for reflecting on the new curriculum in the group Reflecting on and Moving Forward with a New English Language Arts Curriculum on the *Maple* website.

Manitoba Education, Citizenship and Youth. *Developmental Reading Continuum (Phase 1)*. <www.edu.gov.mb.ca/k12/cur/ela/drc/index.html> (11 Feb. 2015).

———. *Helping Your Child Learn to Read: A Parent's Guide*. Winnipeg, MB: Manitoba Education, Citizenship and Youth, 2004. Available online at <www.edu.gov.mb.ca/k12/docs/parents/learn/read.html> (11 Feb. 2015).

———. *Listening and Speaking: First Steps into Literacy: A Support Document for Kindergarten Teachers and Speech-Language Pathologists*. Winnipeg, MB: Manitoba Education, Citizenship and Youth, 2008. Available online at <www.edu.gov.mb.ca/k12/cur/ela/list_speak/> (11 Feb. 2015).

———. *Me Read? No Way! A Practical Guide to Improving Boys' Literacy Skills*. Winnipeg, MB: Manitoba Education, Citizenship and Youth, 2004. Available online at <www.edu.gov.mb.ca/k12/docs/support/me_read/index.html> (11 Feb. 2015).



Children encounter a range of rich texts.



A child composes and creates.

ELA through Play

English language arts learning includes play-based exploration in meaningful contexts. Inquiry encourages meaningful learning because it engages children's inherent curiosity and provides students with opportunities to wonder, build knowledge, and develop inquiring habits of mind leading to a deep understanding of the world and human experience. Questions are formulated by teachers and students to motivate and guide inquiries into topics, problems, and issues related to the curriculum. Inquiry learning is not a step-by-step process, but rather a recurring process, with parts of the process being revisited and rethought as a result of children's discoveries, insights, and co-construction of new knowledge. Exploration, inquiry, and play provide students with opportunities to engage in the four ELA practices in meaningful contexts.

The Learning Landscapes Questions through ELA

The Kindergarten ELA curriculum helps students to understand and appreciate language, and to use it confidently and competently in a variety of situations. Purposeful play and inquiry provide opportunities for students to use all four ELA practices in authentic ways. In Chapter 7, in a vignette about Ms. Smith's class of builders (see Vignette: Builders in the Learning Landscape), Nick and the other children use language and specific vocabulary to understand what happened to the blocks. They also ask important questions. Ms. Smith



After reading and enjoying the traditional story *Stone Soup*, children express the desire to make their own stone soup. Together with their teacher, they develop a shopping list, a meaningful reason to write. Later, they shop for the ingredients at a neighbourhood store and then make the soup as a caring classroom community. Mathematics can be integrated into the learning experience. Children can sort the vegetables into groups and determine the number of items in a group. They can also follow a simple recipe, using numeracy skills related to counting and measuring. They can make comparison statements about the quantities of vegetables such as, "There are 2 more carrots than onions." The children then co-create a documentation panel that captures their learning.

prompts the children with open-ended questions so students can become competent, confident users of the English language while becoming knowledgeable about themselves, their community, and the world through deep and meaningful inquiry. Through ELA, Kindergarten students build positive identities as language and literacy learners within caring communities.

How do I perceive the world in multiple ways . . .

Children actively seek to understand the world around them and to learn about life and language. The ways they explore, show curiosity, engage in inquiry, and play with language are multiple. Children also share unique and multiple perspectives and perceive the world from different lenses. In the vignette, students were able to notice different things, share and test different ideas, and ask different questions. Children were able to approach their block inquiry from different lenses.

I wonder . . .

Through imagining and reimagining, re-enacting stories and ideas in multiple ways, and wondering about big questions, students engage in important and meaningful inquiry. Through critical literacies, Kindergarten children can interpret, question, and evaluate ideas and information to further explore compelling questions about self, others, and the world. Nick asks what happened to cause his blocks to fall, a compelling question for him as he evaluates his ideas. Kindergarten students can pose and generate questions and problems, explore ideas from different perspectives, and use diverse approaches to test discoveries, solve problems, make decisions, and resolve conflicts.

How do I make meaning . . .

Kindergarten students make meaning of texts, ideas, self, and the world through multiple modes. Through viewing, representing, listening, speaking, reading, writing, and combinations of these modes, students navigate and share their thinking and understanding. In the vignette, while using blocks of different shapes, children come together to explore language and ideas related to building. In Kindergarten, students make meaning before, during, and after viewing, listening to, and reading a variety of oral, literary, and media texts. Nick describes his idea before he places the block (artifact, text, or medium), with a prediction about what will happen. Students are able to choose the before, during, and after strategies to build understanding (comprehension). The open-ended question Ms. Smith poses helps the class understand what happened. When children are making meaning, they generate and evaluate their own ideas and language as text to make sense of the experience, just as Nick does

shortly after his building falls. The children listen, read, and view analytically and critically, make and explain decisions, pose questions and seek clarification, and consider various points of view or alternative perspectives.

How do I communicate my thinking, understanding, learning . . .

Communicating thinking, understanding, and learning goes hand in hand with making meaning. Children can make meaning through communication. For example, children may re-enact a story read aloud through play-acting or drama. This supports and deepens their meaning making of ideas while also providing an opportunity to communicate and reimagine these ideas in different ways. As Nick is wondering about the demise of his building, he is communicating the problem, while the other children look on with interest. Before Nick begins, he states his purpose of building a structure and predicts it will be tall. After the crash, he rethinks and revises his ideas with the help of his classmates. Children actively engage in acquiring language and in constructing their own understandings, just as Matthew does, when he makes a connection to his previous building.

How do I build my identity and my relationships with others, with my community, with Earth . . .

Kindergarten teachers and children build deeper understandings of their communities, languages, and identities as they explore questions, ideas, and concerns about themselves and the world. In doing so, they deepen their respect and value for the diversity in classrooms, schools, and other communities, and the multiple perspectives, lenses, and ways of knowing represented in these communities. Meaningful learning contexts provide the space for students to use language and other symbol systems that reflect their identities, and that enable them to advocate for themselves, their communities, and the environment.

What do I do with what I know . . .

Through inquiry, play, and other ways of experiencing, students communicate and transform learning in diverse and innovative ways. They imagine and reimagine ideas, experiences, stories, and even themselves and their communities. They work together to problem solve. They further investigate and question and make decisions about how they position ideas, information, stories, and themselves, and how they use language to do this. They invent, take risks, and reflect to create possibilities.

A successful approach to Manitoba's Kindergarten ELA curriculum is embedded in research-based practice that responds to what we know about educational effectiveness and what is developmentally appropriate for young learners.

Mathematics Landscapes

As children explore the mathematics landscapes, they communicate, make connections, and reason in order to solve problems. Through counting, sorting, matching, comparing, measuring, creating patterns, and building shapes, Kindergarten students make sense of mathematical concepts. Kindergarten teachers provide young learners with math manipulatives and experiences for active engagement so that they can explore concepts related to number, patterns, shapes, measurement, and geometry. Mathematics learning is embedded in mathematics lessons, play, discussions, reading, storytelling, and daily routines to foster the development of mathematical thinking and understanding.

Kindergarten Curriculum at a Glance: Mathematics

Rationale

By creating an atmosphere that encourages exploration and by using engaging learning activities, teachers develop and nourish children's curiosity about mathematics. This curiosity fosters appreciation for, and value of, mathematics. Kindergarten students explore mathematical concepts such as counting, patterning, sorting, and measuring, and build understanding through hands-on, interactive, and meaningful learning experiences. Positive early experiences in mathematics build confidence and help prepare children to communicate, reason, and use mathematics to think critically about the world.

Organization of Kindergarten Mathematics

The Kindergarten mathematics curriculum has three strands:

- **Number**
- **Patterns and Relations**
- **Shape and Space**

The following seven **mathematical processes** are important components that students must encounter in mathematics to help achieve the goals and encourage lifelong learning in mathematics. Students must

- **communicate** what they are thinking and learning
- **connect** mathematics to everyday situations and other subjects
- **estimate** and **use mental mathematics strategies**
- learn through **problem solving**
- **reason** and explain their thinking
- **use technology** to enhance their learning
- **use visualization** to describe their thinking

These seven interrelated mathematical processes are intended to permeate teaching and learning of the learning outcomes identified in the Kindergarten Mathematics curriculum.

Learning Environment

The mathematics-rich learning environment provides opportunities for

- using mathematics language to encourage math talk that focuses on student understanding
- doing, talking about, and reflecting on mathematics
- promoting and facilitating problem solving as a way of teaching and learning
- developing understanding by using manipulatives and providing links among concrete, pictorial, and symbolic representations of mathematics

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Kindergarten Curriculum at a Glance: Mathematics

- focusing on important mathematical concepts or big ideas during mathematics instruction
- establishing mathematics routines that promote understanding (journalling, number of the day, math word walls [pictures], problem solving, and counting centres)
- developing an understanding of the relationships and flexibility of numbers
- promoting enthusiasm for mathematics that develops students' confidence, imagination, flexibility, inventiveness, and persistence in their ability to understand and use mathematics

Curriculum Resources

Manitoba Education. *Kindergarten to Grade 8 Mathematics: Manitoba Curriculum Framework of Outcomes*, 2013. Winnipeg, MB: Manitoba Education, 2013. Available online at <www.edu.gov.mb.ca/k12/cur/math/framework_k-8/> (22 Oct. 2014).

Manitoba Education and Advanced Learning. "Blackline Masters." *Mathematics*. <www.edu.gov.mb.ca/k12/cur/math/k_support/blms/index.htm> (11 Feb. 2015).

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———. "Early Years Mathematics Activities and Games." *Mathematics*. <www.edu.gov.mb.ca/k12/cur/math/games/> (11 Feb. 2015).

———. "General and Specific Learning Outcomes with Achievement Indicators by Grade: Kindergarten." *Mathematics*. <www.edu.gov.mb.ca/k12/cur/math/framework_k-8/kindergarten.pdf> (11 Feb. 2015).

———. *Kindergarten Mathematics: Support Document for Teachers*. Winnipeg, MB: Manitoba Education and Advanced Learning, 2014. Available online at <www.edu.gov.mb.ca/k12/cur/math/k_support/index.htm> (11 Dec. 2014).

Manitoba Education, Citizenship and Youth. *Helping Your Child Learn Math: A Parent's Guide*. Winnipeg, MB: Manitoba Education, Citizenship and Youth, 2004. Available online at <www.edu.gov.mb.ca/k12/docs/parents/learn/math.html> (11 Feb. 2015).

Mathematics through Play

Young children are naturally curious and develop a variety of mathematical ideas even before they enter Kindergarten. Children make sense of their environment through observations and interactions at home, in their early learning and child care programs, in preschools, and in the community. Mathematics learning is embedded in everyday activities, such as playing, reading, storytelling, and helping around the home and at preschool centres. Learning experiences can contribute to the development of number and spatial sense in children.

Curiosity about mathematics is fostered when children are engaged in learning activities such as comparing quantities, searching for patterns, sorting objects, ordering objects, creating designs, building with blocks, and asking questions and talking about these activities (see Vignette: Builders in the Learning Landscape, Chapter 7). Young children need to explore mathematical concepts such as counting, patterning, sorting, and measuring through hands-on and interactive approaches in order to enhance their knowledge about mathematics and make it meaningful for them. Positive early experiences in mathematics are as critical to child development as early literacy experiences are.

Kindergarten students observe numbers and patterns in their lives. They use objects and pictures to show and compare quantities of things up to 10 and they learn to count to 30. They also learn about patterns and three-dimensional objects.

Young learners make meaning through discussions that provide essential links among concrete, pictorial, and symbolic representations of mathematics:

- **Concrete:** Representing a situation or solving a problem using actual objects.
- **Pictorial:** Representing a situation or solving a problem using drawings or representations of actual objects.
- **Symbolic:** Representing a situation or solving a problem using an abstract representation. Most symbolic representations involve using numbers.



Concrete, pictorial, and symbolic representations of 7.

Kindergarten children come to school possessing mathematical knowledge. Through your observations of children, you assess their prior knowledge. Then you build upon their strengths and facilitate their learning in an engaging and authentic manner by making connections and integrating ideas and subject areas.

The learning environment should value and respect children's own experiences and ways of thinking, so that learners are comfortable taking intellectual risks, asking questions, and predicting what might happen next. Young children need to explore problem-solving situations in order to construct their own personal strategies and become mathematically literate. Learners begin to realize that it is acceptable to solve problems in different ways and that solutions may vary.

In addition to setting up a mathematics discovery centre (see Chapter 6), you can incorporate mathematical learning into many other learning centres. For example, using your sensory table, encourage children to learn important concepts about volume as they explore the physical attributes of water, ice, and snow, or even mud. Offer children different types and sizes of containers that will hold water and various small utensils, such as measuring cups and spoons, to support their explorations about conservation. Ask children to predict how many cups of water or how many spoons full of snow it would take to fill a certain container, and then do the "experiment" to find out. Help children to chart their findings.

"Meaningful math activities in the context of play can foster crucial aspects of children's development. . . . Learning to count by rote teaches children number words and their order, but it does not teach them number sense, any more than singing the letters L-M-N-O-P in the alphabet song teaches phonemic awareness. . . . Teaching math effectively requires a focus on children's understanding of the core foundational concepts in mathematics" (Stipek, Schoenfeld, and Gomby).

At your science discovery centre, set up a classification activity for children to pick up items with magnets. Some will stick and some will not. Children can chart their discoveries. One teacher observed that "exploring magnetism was a great topic for discovery bins" (for a discussion of discovery bins, see Chapter 6). Later in the week,



(L) Students use magnetism discovery trays. (R) Measuring children's height early in the school year and then at regular intervals throughout the year offers children many opportunities to construct their own mathematical meaning.



she added small plastic bottles and containers with iron filings inside. Some students decided to sort the materials based on whether or not they were magnetic. This hands-on learning addressed curricular connections to mathematics, science, and language arts.

In the gymnasium or on an obstacle course you set up, children can learn about weight and balance as they try to walk across a balance beam. You can naturally insert positional words into the conversation as children climb over things, or crawl under or through, or walk on top of, beside, or in front of friends or obstacles.

Consider placing your class calendar in your dramatic play centre, as many children will be familiar with family calendars hanging in their kitchens at home. Since time is often an abstract concept for Kindergarten children who are still pre-operational thinkers, you can encourage them to circle and label important milestones, such as the hundredth day of school, or mark class inquiries, such as when children began building their stadium and the date it was finally finished. The calendar can help children count days consecutively, practise one-to-one correspondence, name the days of the week, and experience the passing of days, weeks, and months in authentic ways. Discovering the calendar through play may be far more meaningful than the rote calendar activity that so often starts off a Kindergarten day. (For more discussion on this topic, see Chapter 5.)

Teachers create learning environments that provide opportunities to explore children's interest through weaving together curricular expectations and helping children to see the connections between the various concepts they are learning about. To build and explore three-dimensional objects, the class can take photographs of their community, and then discuss how the different structures can be recreated to

make a representation of the community. Students can use modelling clay, blocks, or recyclables to create their representations.



(L) Children pace out the size of the dinosaur. (R) Children use pylons to mark the heads and tails of these enormous animals from long ago.

Children can also use their own bodies to help represent. In one classroom where children were challenged to imagine just how big dinosaurs were, the teacher recognized a great opportunity to develop numeracy skills, while incorporating bodily-kinesthetic learning styles. Together, the class paced out each dinosaur—they all held hands in a line

and counted each step out loud. They used pylons to show the head and the tail of each dinosaur and taped the applicable signs to them, allowing them to make comparisons about the lengths of the dinosaurs.



(Above) Simple games that use dice build children's mathematics skills in enjoyable, low-stress ways.

(Top R) Children's names are so meaningful to them that counting and graphing their letters becomes a simple but powerful learning experience. Children begin to read the names of their friends.

(Bottom R) The children in this classroom created visual representations of their homes, focusing on how many windows they had, and then compared and contrasted using a class graph. Learning outcomes from arts education, science, and social studies were also met.

Science Landscapes

Science education is intended to support children in becoming scientifically literate individuals who can explore and inquire about the world around them (their science landscapes), interpret information, solve problems, make informed decisions, accommodate change, and create new knowledge. Early Years science experiences encourage children to develop a critical sense of wonder and curiosity about the natural world, to develop scientific ways of thinking as they interact with the endlessly interesting things around them, and to learn to express their questions, observations, and thinking.

Kindergarten Curriculum at a Glance: Science

Rationale

Children are born scientists. They are full of wonder, are naturally inquisitive, and make sense of their experiences by observing and interacting with the people and things around them. Learning through science engages children by appealing to their curiosity, their creativity, and their desire to discover and understand the natural world and their relationship with it.

Children enter Kindergarten with surprisingly sophisticated ways of thinking. Their understandings of the world develop and grow as they interact with the endlessly interesting things around them: things that fall, roll, or bounce; things that wriggle and slither; things that chirp, bark, or roar. Even if their understandings are incorrect (e.g., heavy things fall faster than lighter things) young children are naturally persistent as they watch and listen, and try to figure out how something works. These behaviours are the basic practices of science: observing, predicting, analyzing, interpreting, developing models, asking questions, and explaining. When children are encouraged to express what they think and observe, and when their ideas are taken seriously, they are well on their way to more sophisticated understandings.

Organization of Kindergarten Science

The Kindergarten science curriculum is organized into **clusters** of learning. The following three thematic clusters or interest areas provide ideas and contexts for student play and guide broader learning contexts to allow deeper exploration of bigger ideas:

- **Cluster 1: Trees**
- **Cluster 2: Colour**
- **Cluster 3: Paper**

In the Manitoba science curriculum, **Cluster 0: Overall Skills and Attitudes** describes the practices of science, as used in inquiry and the design process. Cluster 0 practices can be integrated throughout the thematic clusters and often purposefully developed through many play-based learning experiences.

Learning Environment

Kindergarten spaces and curricula are generally designed so that children are exposed to a wide variety of stimulating ideas, artifacts, and materials. Environments that enrich science learning will surround children with materials, objects, and living organisms that stimulate thinking and exploration. Such spaces provide many opportunities for hands-on learning and for peer-to-peer communication as children talk about their observations, present their theories and ideas to one another, and justify their conclusions. Children need adequate time in these rich environments to play with their peers and to engage freely and actively with ideas and resources. Science requires thinking, in addition to acting or manipulating. Thus, the “hands-on/ minds-on” approach to science should be purposeful and thoughtful in its design.

Curriculum Resources

Manitoba Education and Advanced Learning. “Kindergarten Science At a Glance—Thematic Clusters.” *Science*. <www.edu.gov.mb.ca/k12/cur/science/outcomes/k-4/topic_charts.pdf> (11 Feb. 2015).

———. *Science and Safety: A Kindergarten to Grade 12 Resource Manual for Teachers, Schools, and School Divisions*. Winnipeg, MB: Manitoba Education and Advanced Learning, 2014. Available online at <www.edu.gov.mb.ca/k12/docs/support/scisafe/index.html> (11 Feb. 2015).

Manitoba Education and Training. *Kindergarten to Grade 4 Science: A Foundation for Implementation*. Winnipeg, MB: Manitoba Education and Training, 1999. Available online at <www.edu.gov.mb.ca/k12/cur/science/found/kto4/index.html> (11 Feb. 2015).

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Science through Play



A boy is intrigued by sand running through hour glasses, added into the classroom by an intentional teacher to enrich science learning and children's developing concepts of time.



A boy uses his hands to paint with red and yellow, predicting and describing changes that occur when primary colours are mixed and demonstrating understanding of the elements and principles of artistic design, using the word *colour* appropriately (Visual Arts, K-2A-L1.1, K-2A-L1.2; Science, K-2-05).

Remember the “teachable moment” and be ready to respond. Much significant learning takes place when the child’s interest takes priority. Children can use science notebooks or clipboards and charts to record their observations. They can record questions they want to learn more about (e.g., What do baby frogs look like?). Avoid structured worksheets; instead, provide children with writing experiences that are developmentally appropriate and meet the needs of children with a variety of abilities and skills. Reviewing and reflecting on their science notebooks allows children to recall and celebrate what they have done and learned.

Although most children need little or no encouragement to play and explore, they may need prompting to explain their thinking and observations, and this is where your role as a teacher becomes critical. To create environments that enrich science learning, you surround children with materials that stimulate thinking and exploration, find ways to ask well-timed probing questions that prompt children to ask further questions, and promote a sense of safety and confidence-building in posing or answering questions, so that children can look for evidence, conduct tests, and construct and share their ideas. Once children feel confident about their own abilities to think and question, their play moves into the realm of enriching, but still fun, scientific inquiry. Guided learning—using the basic practices of science in a developmentally appropriate manner—encourages children to think scientifically and provides them with skills to build new knowledge and develop a better understanding of their world.

The design process skills help children understand how science and engineering work together to find solutions to practical problems, and assist children in recognizing the important role of creativity and collaboration in science. In Kindergarten, the design process is limited to a few important situations, namely, how to

- recognize a problem that could be solved
- brainstorm with classmates about possible solutions
- evaluate a solution in a group environment and then put it into practice with teacher and peer guidance



A boy investigates the properties of a giant hosta leaf, using Unifix cubes to communicate its size.



A budding scientist enjoys microscope activities. Note that in many Hutterian colony schools, a multi-age classroom is the norm, making it more likely that a Kindergarten child might encounter a microscope.

The problem to be solved could be “How will we design a way to feed our fish while we are away from school on a long weekend?” or “We want to catch rainwater from the roof of the school for our tomato plants. How could we do that?” The design process skills serve to make science learning more immediate, more practical, more meaningful, and more relevant to a young child.

Two important aspects of scientific inquiry are the skills of communication and collaboration. Children need time (and may need assistance) as they work with their peers to analyze and interpret information. They also need opportunities to explain their thinking and to express their ideas and discuss them with others. They may use a variety of media to do this, including drawing, writing, making graphs (e.g., “pictures of my numbers”), making pictorial representations of findings or of data, or simply talking. Taking time to discuss the children’s ideas, either one-on-one or in a group setting, will help to uncover their thought processes and understandings.

In the following vignette from a Kindergarten teacher, you will see how a spontaneous experience provides an opportunity to

- find out what children already know
- find out what children want to know
- provide children with space and time to reflect and come up with theories
- provide children with space and time to test their theories
- extend and integrate curriculum outcomes in science and other subject areas



Vignette: Scientific Inquiry: Responding to Children's Interests through Teachable Moments

On a morning in June, some of the children came to Kindergarten talking excitedly about the “millions of caterpillars” they had seen on a tree in the schoolyard when they had been playing outside before school started.

As I listened to their excitement, I wondered about what they were thinking, and so I asked them questions and made comments such as “It sounds like you noticed . . .” and “What are you thinking about?” Finally, I asked, “What do you want to do?” And they answered, “Go outside and watch them some more.” While listening to their answers, I wondered about how children could further explore their questions and decided that we really should go outside to observe the caterpillars in more detail as the children had requested. However, before we did this, I needed to do some planning. I wondered whether there was a way to go out in smaller groups so the children would have more time to explore and discover. And if not, what plans would I need to make so the entire class could go out together but still have a meaningful experience observing the caterpillars? I also thought about timing. We needed to visit the caterpillars as soon as possible, as there was a risk that the caterpillars would be gone later in the day; at the same time, we needed to go out when we would not be interrupted, so we could make the most of this experience. After some thought and discussion with my colleagues, I determined we should go out before first recess. I also thought about the Kindergarten curricula and what learning outcomes we might meet through this discovery.

Before we left our classroom, I reminded the children to take out some clipboards and paper to support their writing. I also made sure I was prepared. I brought the camera to take photographs of what the children noticed, as well as a clipboard with paper for me because I knew the children would have a lot of questions that I would need to record to capture their wonder during this time.

While outdoors, the children asked initial questions about the caterpillars:

- What are they?
- What are they doing?
- Where do they live?
- What do they eat?
- Do they have babies?

The children also talked about what kind of caterpillars they might be, wondered why there were so many of them on one tree, checked nearby trees to see whether they had caterpillars too, and then wondered why just this one tree had all the caterpillars.

After this experience, I knew the children needed time to review what we had noticed and wondered about while we watched the caterpillars. I uploaded the photos for children to review during group time. This was an opportunity to draw the children back to what we saw and to revisit the questions they posed. During this time, I again stopped and listened to what the children were saying as they reviewed the photos and their own notes. This gave children opportunities to think about what they already knew and what they wanted to find out, share their theories, and scaffold on their knowledge. My role was to help the children organize their thoughts and record them for future reflection, rather than lead them toward particular answers. In this way, children could make connections between what they already knew and what they could discover.

One child made a worried comment, expressing his hope that “the big kids would leave the caterpillars alone at recess.” A discussion began about this concern. We considered whether this was a big concern and what we could do about it to help. Ideas included going to speak to the other classes, making an announcement, or making signs. The children who were interested began to make signs to place around the tree, similar to the signs they often make to protect and save the

Reflection

After our group time, I knew the children needed more time to discover. I asked myself:

- When can I plan time for the children to continue to observe and question?
- How can I help them answer their questions?
- How can I help children fully develop their theories and continue this experience for them?
- How can I help them solidify their ideas?
- How can I continue to allow children to lead their inquiry, not only in science, but across the curriculum?
- How can I guide the learning to address curriculum outcomes?
- What did the children notice?
- Have the children seen anything like this before?
- What do they already know about this?
- How can I invite the children to continue to question and provoke their interest?
- Now what do I do about all this?

block structures they are working on at playtime. Children collected paper, craft sticks, clipboards, tape, glue, and other materials to construct their signs as they figured out how to make signs that would stand on their own or in the ground and not be blown away or need to be affixed to the tree. Children had a meaningful reason to write. Our class went back outside to place the signs around the base of the tree, and to take some more pictures of the caterpillars.

For this group of children at this time, the real interest was about the safety of the caterpillars. At a later time, the interests of these same children may grow into different areas. For another group of children, safety of the caterpillars may not be an interest they need to investigate. Instead, they may be interested in the movement of the caterpillars and need experiences to express themselves through music and movement; they may be interested in the look of the caterpillars and need to make visual representations of the caterpillars in different mediums; or they may be curious about caterpillar growth and need to make hands-on connections between concepts such as size and length and their observations of the caterpillars' growth over a month.

The beauty of responding to children's interests is that the process of the inquiry allows children to construct their knowledge and develop important skills. Each child will have a different journey within the learning landscapes, yet they all will have more meaningful opportunities to learn. Providing time for children to investigate fully allows teachers to focus on the entire Kindergarten curriculum through children's own interests.



(Top L) The provocation: a tree covered in caterpillars. (R) Children begin to create signs to protect "their" caterpillars from the bigger students.

(Bottom L) One sign, complete: Don't touch, "jus" look, Ben. (R) The children encircle the tree with their warning signs.

Social Studies Landscapes

Social studies helps young learners to acquire an understanding of who they are in relation to the landscapes in which they live. Students explore how they view the world and build upon who they are in relation to others in their world. They become aware of how people live, play, and work together in order to meet their basic needs. As they explore their social and natural environments, young learners become aware that they live in a country called Canada, and begin to see themselves as part of a larger world.

Kindergarten Curriculum at a Glance: Social Studies: Being Together

Rationale

Social studies helps children to understand the importance of our Earth, to care about the well-being of living things and the environment, and to recognize that their personal decisions can contribute to the well-being of the environment. Social studies learning experiences focus on personal relationships and the world around us, providing children with the knowledge, skills, and values of active, responsible citizenship. Social studies helps students learn to care about all the people around them—the people with whom they share this planet, near and far away. As Kindergarten children work and play together, they learn that their behaviour affects others, and they can and need to make their voices heard. They learn they can stand up for justice, for what is right and fair, and to take action when needed.

Organization of Kindergarten Social Studies

The Kindergarten social studies curriculum is organized into **clusters**:

- **Cluster 1: Me:** Students are given the opportunity to think about their identity and communicate who they are in creative ways: What makes them unique? What are their abilities and interests? What groups or places are important to them?
- **Cluster 2: The People around Me:** Students build upon their identity as they explore the people around them who care for them and influence their lives. Through interactive play, they learn essential skills in communication, cooperation, and problem solving. These skills are important as they build their relationships and will help them through their formative years as they play and work together with others.
- **Cluster 3: The World around Me:** Students look at the world around them, exploring their local neighbourhood and learning that they live in a country called Canada. They learn that all people have the same basic needs, but may have different ways of meeting those needs. By studying and designing creative models of their neighbourhood, they make meaning of the variety of ways (i.e., maps and globes) they can portray natural and human places in our world.

Learning Environment

Social studies classrooms provide children with the knowledge, skills, and values of global citizenship. Students are given opportunities to investigate and inquire about their role in local communities and their responsibilities as global citizens. Through collaboration and cooperative learning activities, they learn skills necessary to work and play together. These interactive learning strategies help Kindergarten children to develop good personal relations, and show them how they can contribute to the greater good of the classroom, school, and local/global community.

(continued)

Kindergarten Curriculum at a Glance: Social Studies: Being Together

Curriculum Resources

Manitoba Education and Advanced Learning. "Websites to Support the Curriculum." *Social Studies*. <www.edu.gov.mb.ca/k12/cur/socstud/supporting/index.html#k> (11 Feb. 2015).

Manitoba Education, Citizenship and Youth. *Kindergarten Social Studies: Being Together: A Foundation for Implementation*. Winnipeg, MB: Manitoba Education, Citizenship and Youth, 2005. Available online at <www.edu.gov.mb.ca/k12/cur/socstud/foundation_k/index.html> (11 Feb. 2015).

Social Studies through Play

Play-based learning provides children with a way to wonder about and explore their world, and to discover what it means to be a citizen—of their classroom, school, and community, and the Earth. Social studies builds the knowledge, skills, and values we all need as we live and work at *being together* in this democratic country we call Canada.

Social studies provides skills that help children build their identity and relationships with others and in the world. These skills include

- communication
 - listen actively to others
 - use language that is respectful of others
- cooperation and collaboration with others
 - consider others' needs when working and playing together
 - interact fairly and respectfully with others
 - accept differences
 - take responsibility
 - identify consequences of their actions
 - resolve conflicts peacefully
- decision making that reflects the need to care for the Earth and to protect our collective future

Every child comes to the classroom with a unique and personal set of identities, including gender, language, beliefs, values, family and life experiences, interests, and physical attributes and abilities. When social studies is incorporated in play-based learning, children have opportunities to perceive the world in multiple ways, to learn that although everyone is unique, we all have the same basic needs—an idea that is foundational to living in a diverse and democratic society that relies on ideas of equality, fairness, and respect for others.

"... the curricula of social studies use big ideas to connect with children and deepen their understanding of their relevant social world" (Mindes 7).

What types of responsibilities do children carry out? How do children fit in their social world? In one Manitoba Kindergarten classroom, the teacher invited families to photograph their own children engaged in helpful and responsible behaviours at home and to write a short description on a recipe card of how their child helps. (The classroom digital camera was sent home with children whose families did not have a camera.)

When the photos and stories came back to school, the class discussed them and posted them in the classroom under the title Helping Hands. The stories and photos showed that children watered plants, folded clothes, put away groceries, helped with cooking and baking, and carried out many other important jobs at home. This learning experience helped children to master an important social studies learning outcome: acting responsibly allows us to live together peacefully. In addition, children learned about how things are done in families other than their own, which supported children's developing abilities to consider the perspectives of others and to be more accepting of differences. Importantly, this learning experience also supported family engagement in children's learning by involving families directly in their children's Kindergarten experiences.



Photos and short write-ups of how children help at home are displayed in the classroom. Children see themselves reflected in their classroom; families are engaged in their children's learning.

Children also learn about the ways they can help out and hold responsibility in Kindergarten. Taking care of the classroom can be considered as part of the Kindergarten social studies curriculum. This time of day builds community by designating group responsibilities for maintaining the classroom's physical environment. Children may also share responsibility for other classroom jobs, such as watering plants, feeding pets, being the line leader, and many other small developmentally appropriate tasks that build on children's desire to be helpful.

“Social studies at the center of early childhood curricula offers the hope that the focus of education will be on the development of effective, efficient, ethical children who will approach their world non-simplistically and thoughtfully. With the help of good teachers, children will not only absorb the content that focuses on citizenship education in all its permutations, but also learn how to learn and how to consider multiple perspectives” (Mindes 7).



This display shows a way to track children’s roles and responsibilities in the class.



Vignette: Learning the Difference between Needs and Wants

“Teaching strategies in preschool and primary social studies include individual investigations in the library, in the field, and on the Internet; interviews; small-group collaboration; and large-group discussions” (Mindes 6).

In one Kindergarten class, the teacher initiated a playful learning experience that followed an earlier circle time discussion about *basic needs* and how those might be different from *wants*. During free choice time, children could choose to count, sort, and classify the items found in a bin—a selection of items representing both needs and wants. The small-group format supported children’s collaboration as they examined each item, often stopping to play with materials found in the collection. There was lots of good discussion among the children as they put forward their reasons for calling each item a need or a want, listened actively to others, interacted fairly and respectfully, and accepted differences.

In the end, the children decided that *wants* included money, candy, and toys. *Needs* included a blanket, representing warmth and shelter, the teddy bear, representing comfort and love, and the water bottle, which was moved to the *needs* side after a persuasive argument by one child.

Through this social studies learning experience, mathematics learning outcomes were also addressed.



(L) A boy stops to play with Lego, one of his *wants*, while another retrieves a ball that has bounced away. (R) Three boys examine items they will sort into needs and wants.



(L) Some of the wants included money, candy, and toys. (R) Four boys are proud of the work they have done together.

Physical Education/Health Education Landscapes

In the combined physical education/health education (PE/HE) curriculum, Kindergarten students develop the knowledge, skills, and attitudes to lead physically active and healthy lifestyles. They participate in physical activities for fun and for fitness. They learn ways to stay healthy, to look after themselves, and to recognize unsafe situations. They also learn about following safety rules and getting along with others.

Kindergarten Curriculum at a Glance: Physical Education/Health Education

Rationale

The Kindergarten to Grade 12 PE/HE curriculum supports the health and well-being of every school-age child and the prevention of significant behaviours that contribute to today's major health risks for children and youth (see Chapter 10).

Organization of Kindergarten PE/HE

The combined PE/HE curriculum provides a connected approach to learning about the mind and body that promotes healthy and active living. The Kindergarten to Grade 12 PE/HE curriculum is designed to support an integrated and holistic approach to using highly active and interactive learning experiences to promote lifelong physical activity and well-being.

During Kindergarten, the following general learning outcomes (GLOs) are met:

- **Movement and Fitness Management (GLOs 1 and 2):** playing cooperatively; refining basic skills, such as running, hopping, and bouncing balls; and participating in physical activities
- **Safety (GLO 3):** recognizing and following safety rules for physical activities, footwear, and playgrounds; identifying safety symbols and rules for traffic, school buses, poisons and chemicals, stoves, sharp utensils, bathtubs, and waterfronts; and knowing where to go and whom to ask for help in the community
- **Personal and Social Management (GLO 4):** identifying own actions, feelings, and emotions related to getting along with others; knowing how to listen carefully, avoid danger, and find help; and recognizing what is safe/healthy and what is unsafe/unhealthy
- **Healthy Lifestyle Practices (GLO 5):** knowing daily habits for healthy living, such as daily physical activity, teeth brushing and washing, healthy eating, and getting enough sleep; identifying helpful and harmful substances; naming the parts of the body; and understanding the right to privacy (e.g., washrooms)

(continued)

Kindergarten Curriculum at a Glance: Physical Education/Health Education

Learning Environment

The PE/HE learning environment must be safe, inclusive, and healthy, with a focus on active learning. The physical education setting emphasizes fair play, enjoyment, socialization, and active living through a wide variety and balance of physical activities that focus on successful participation and involvement, including skill and fitness development. The health education setting promotes learning about healthy relationships and lifestyles through activities that are relevant, current, meaningful, and balanced, and offer a variety of choices in learning experiences. The emphasis is on active interaction with subject matter and other learners.

Curriculum Resources

Manitoba Education and Advanced Learning. "Kindergarten to Grade 4 Curriculum Documents." *Physical Education/Health Education*. <www.edu.gov.mb.ca/k12/cur/physhlth/kto4.html> (11 Feb. 2015).

Manitoba Education, Training and Youth. "Blackline Masters." *Kindergarten to Grade 4 Physical Education/Health Education: A Foundation for Implementation*. <www.edu.gov.mb.ca/k12/cur/physhlth/foundation/blm.html#kindergarten> (11 Feb. 2015).

———. *Kindergarten—Physical Education/Health Education—Specific Learning Outcomes*. Winnipeg, MB: Manitoba Education, Training and Youth, 2001. Poster available online at <www.edu.gov.mb.ca/k12/cur/physhlth/foundation/poster_k.pdf> (11 Feb. 2015).

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Grocery Store: Curricular Connections

As children in this class looked at grocery store flyers, which were added into their dramatic play centre, they began to play shopping at the store. They became interested in creating grocery lists (meaningful reasons to write) and to talk about healthy food choices. This allowed their teacher to address the physical education/health education learning outcome, Recognize the food guide rainbow and a variety of foods in *Canada's Food Guide to Healthy Eating* (K.5.K.C.1a). They showed their understanding of the food groups as they cut out pictures and sorted them by the categories of Meat and Eggs, Fruit and Vegetables, Breads and Cereals, Milk and Cheese, and Sometimes Food (treats).

Cross-curricular connections were also fostered. Children discussed the colours of the rainbow (science learning outcomes) and patterns and relations (mathematics—sorting and organizing). As they talked about food and cultures, and the geographic regions where some of the foods were grown, social studies learning outcomes were met. Children also demonstrated their ability to manage their ideas and information and to represent their ideas (English language arts).



A child creates her shopping list.



The class sorts food choices into groups.

PE/HE through Play

PE/HE provides daily opportunities for young children to learn about and experience the benefits of physically active and healthy lifestyles. Through making meaning, exploring perceptions, building relationships, and communicating with others, children understand what it means to be active and make safe, healthy choices.

Personal and social management skills help children develop healthy lifestyle practices and relationships, and contribute to the development of positive self-image and the acceptance of self and others. Learning activities focus on five personal and social-management skills:



Daily outdoor play is beneficial to children year-round.

- goal-setting/planning skills
- decision-making/problem-solving skills
- interpersonal skills
- conflict-resolution skills
- stress-management skills

Integrating PE/HE into the core Kindergarten curricula is common in many Manitoba classrooms. For example, when Kindergarten children play the game of Partner Tag as part of the PE/HE curriculum, mathematics and social studies learning outcomes are addressed along with children's physical and cognitive developmental domains. As discussed in Chapter 5, many teachers use the outdoors as an extension to their indoor classroom and some implement a regular outdoor exploration block as part of their schedule. There is great opportunity for young learners to achieve an increased level of physical activity when teachers ensure that physical activity is included as a component of the day (Thirkill et al.).



Children learn beginner's yoga and are mastering the tree pose (*vrksasana*), trying it first for five and then for ten slow, steady, and deep breaths once they have found their balance.

In some schools, Kindergarten teachers teach key PE/HE concepts in their own classrooms or outdoors, while in other schools, children are taught by the school's PE/HE teacher. One teacher responsible for meeting her students' PE/HE learning outcomes shares that her little red wagon is always filled with items to enrich outdoor physical play activities, such as many different sizes of balls. In the fall, it often includes rakes, a bird-watching reference book, a camera, magnifying glasses, racquets, and balls. In the spring, it holds bits of wood for floating in puddles, sand shovels and buckets, watering cans, streamers, stilts, skipping ropes, large paintbrushes (for painting with water on pavement or sidewalks), and binoculars.

The Landscapes of English as an Additional Language

Increasingly in Manitoba, children enter Kindergarten with a home language other than English, or a variation of English that is different from that used in school learning. A strength-based approach sees these children as emerging bilinguals and values their first language proficiency (possibly including some literacy skills), while providing time and opportunity for them to develop the English language proficiency they will need for school and community. Kindergarten is a time of great transition for children, and the transition is greater for children who are new to the language and culture. As a curriculum area, English as an additional language (EAL) encompasses language and cultural learning, as well as providing children with strategies to become resourceful, confident learners of their new language.

Kindergarten Curriculum at a Glance: English as an Additional Language

Rationale

Children who speak English as their first language generally enter Kindergarten knowing a vocabulary of several thousand words and the basic structures of English. The social and experiential learning in Kindergarten expands that base and begins to help children develop “school” language, while laying the foundations of the curricular areas. Many of the basic Kindergarten learning principles (e.g., experiential, language-rich, constructivist, social) naturally build language, but EAL learners will need conscious and specific attention to ensure they catch up with their peers. While young children will usually pick up everyday communication skills in one or two years, they usually need five to eight years to gain fully the language and skills that are required for success in the higher grades. EAL learning is critical for students to feel included in the life of the classroom and to access the provincial curriculum. The EAL curriculum framework assists teachers in planning the language and cultural support that is needed.

Organization of Kindergarten EAL

The Kindergarten to Grade 12 EAL curriculum provides an EAL Acquisition Continuum of Stages to help teachers and parents assess and describe the child’s current level of EAL proficiency and plan for learning. The Early Years continuum has three stages, from beginning to grade-level proficiency. The individual differences of children have a great impact on how they engage and progress in English language learning.

Four interconnected **domains** of EAL learning are necessary for students to become proficient users of English for social interaction and academic learning:

- **Domain 1: Linguistic Competence**
- **Domain 2: Contextual Applications**
- **Domain 3: Intercultural Competency and Global Citizenship**
- **Domain 4: Strategic Competence**

Each of these domains contains clusters of more specific learning strands (e.g., sound and symbol system [pronunciation]), for which learning goals are described for each of the three stages. The EAL curriculum framework is complementary to the other curricular areas as children learn to understand and use language successfully to engage in learning experiences.

(continued)

Kindergarten Curriculum at a Glance: English as an Additional Language

Learning Environment

Although children may be very quiet in class for the first few months of Kindergarten, they are listening to and absorbing the sound and meaning of the language. Children are encouraged, but never forced, to contribute—they generally understand more than they can produce. A new language is best learned in a highly interactive environment, where exchanges have clear meaning and purpose, situated in observable contexts and tasks. Kindergarten provides the ideal environment for learning a new language—through movement, visuals, real objects, music, arts, inquiry, role play, and so on. Shared experiences, accompanied and followed by teacher-guided conversation and language development, will enrich all children, but are especially effective for EAL learning. Building a rich oral vocabulary will facilitate literacy development. Home languages are also valued. Scaffolding is a key principle for language development (see Chapter 4 for more about scaffolding).

Curriculum Resources

This EAL snapshot is meant to supplement the information found in the following curriculum framework, which provides an in-depth discussion of programming for EAL students and should be used as a foundational resource to guide practice when working with EAL learners.

Manitoba Education. *Manitoba Kindergarten to Grade 12 Curriculum Framework for English as an Additional Language (EAL) and Literacy, Academics, and Language (LAL) Programming, June 2011 Draft*. Winnipeg, MB: Manitoba Education, 2011. Available online at <www.edu.gov.mb.ca/k12/cur/eal/framework/index.htm> (7 July 2014).

Pathways through EAL Landscapes

The pathways through which learners acquire EAL are influenced by their own unique learning landscapes. Children’s internal characteristics, combined with their social environment, family support, and other environmental factors, influence how they learn a second language. The dynamic process of developing language and making meaning evolves through the interaction of multiple factors, including how children perceive their world culturally and linguistically.

Experts in the learning of additional languages highlight key considerations about the ways children acquire language:

- Second language learning requires explicit instruction.
- Conditions required to support each child vary.
- Second language learning involves acquiring skills in both social and academic language.



Assessing Language Proficiency Levels

EAL students are learning within classroom environments where English is generally the sole language of instruction. Without providing appropriate supports, EAL students may experience marginalization, and their literacy development may be delayed. Knowledge of ways to adapt instructional practices and interaction patterns to correspond with the students' levels of English language proficiency will assist you to provide appropriate programming for your EAL students. Designing and differentiating instruction to facilitate learning within your Kindergarten classroom requires you to focus on the individual student's language acquisition needs and explicitly provide opportunity for English language development.

Pairing EAL students with English-speaking partners is a strategy that allows children to learn classroom routines and expectations while building important social connections.



Vignette: Retelling a Story in Different Languages

Our culturally diverse school has many newcomer and EAL learners, whose families speak many languages at home. Children enjoyed reading a very simple picture book and were especially proud of their successes in reading it on their own, since it contains only five words in various combinations. One child wondered about retelling the story in his own language, leading to the class decision to write and illustrate their own version in English, Tagalog, and Punjabi. Parent volunteers were recruited to help with the writing work and later to sit on the teacher's chair and read the book in its new incarnation to the children. This learning experience supported learning outcomes in English language arts, social studies, and arts education. Key EAL learning outcomes included children learning to understand and use language successfully to engage in a highly interactive shared learning experience. Creating books in various languages was also a wonderful family engagement strategy (about which you can read more in Chapter 10).



Children create their own book illustrations using the “still life” technique.



The original picture book (R) and the children's version are displayed.



Reflection: Play throughout the Kindergarten Curriculum

In your reflection about play throughout the Kindergarten curriculum, consider questions such as these:

- How can you increase the potency of the learning experiences you offer to children by connecting them meaningfully to other curricular areas and learning goals?
- What concepts can you use to pull together various curricular areas?
- How do you include writing opportunities, language development, and other important goals?
- What steps in the learning process will help move children from where they are to the new target (in their own zone of proximal development)?
- Which developmental domains are being addressed as you introduce learning experiences?
- How can you weave the curriculum into children's interests through play to create relevant/meaningful/authentic experiences?
- What special considerations do you make to ensure the needs of EAL students are addressed?

Summary

In this chapter, you reviewed snapshots of the Kindergarten curriculum, thinking about how to help children meet important learning outcomes through an inquiry-based, integrated, and playful approach to learning. Chapter 9 continues with snapshots that will help you to consider the integratable elements of learning.



Continue Your Learning

For a description of Manitoba's various types of curriculum documents, see:

Manitoba Education and Advanced Learning. "Types of Curriculum Documents." *Curriculum*. <www.edu.gov.mb.ca/k12/cur/types.html> (12 Nov. 2014).

To access detailed general and specific learning outcomes for each subject area, see:

Manitoba Education and Advanced Learning. *Curriculum/Subjects*. <www.edu.gov.mb.ca/k12/cur/index.html> (12 Nov. 2014).