

**REVISED**

# The Kindergarten Program



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Une publication équivalente est disponible en français sous le titre suivant : *Jardin d'enfants, 2006*.

This publication is available on the Ministry of Education's website, at <http://www.edu.gov.on.ca>.

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# INTRODUCTION

This document replaces *The Kindergarten Program, 1998*. Beginning in September 2006, all Kindergarten programs will be based on the expectations outlined in this document.

## THE IMPORTANCE OF KINDERGARTEN

Children's early learning experiences have a profound effect on their development. These early interactions directly affect the way connections are made in the brain. Early learning experiences are crucial to the future well-being of children, and establish the foundation for the acquisition of knowledge and skills that will affect later learning and behaviour. Before they go to school, children have been learning in a variety of environments – in their homes and in childcare and community settings. Children arrive at school with different backgrounds and experiences and at different stages of development. Positive early experiences with school are of paramount importance to young children. Children thrive within classrooms that meet their physical and developmental needs and that provide a secure, respectful, and nurturing environment.

In 2003, the Ontario government released the expert panel reports on early reading and early math in Ontario.<sup>1</sup> Drawing on evidence-based research, these reports offered strategies to support the goal of improving achievement in literacy and numeracy for children in Junior Kindergarten to Grade 3. As stated in one of the guiding principles of the early reading report, early success in reading is critical for young children. The early math report indicated that early development of mathematics understanding has a profound effect on mathematical proficiency in students' subsequent years. It is therefore critical that Kindergarten programs reflect the importance of early literacy and early numeracy in order to provide what evidence-based research suggests is developmentally sound programming for children in the Kindergarten years. Effective programming occurs in the context of a rich oral-language environment and contains engaging language resources that provide the foundation for successful literacy development.

To give each child the best start possible, it is essential that Kindergarten programs provide a variety of learning opportunities and experiences that are based on assessment information and the strengths, needs, and interests of the children. Although Kindergarten programs are critical in laying the foundations for success in learning, the Kindergarten years are also an important time in children's total development. Teachers, early childhood educators, members of the community, and families should work together to provide challenging and engaging learning experiences that will build children's confidence, encourage them to continue to see learning as both enjoyable and useful, and provide a strong foundation for their future intellectual, physical, and social development.

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1. *Early Reading Strategy: The Report of the Expert Panel on Early Reading in Ontario, 2003*, and *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario, 2003*, published by the Ontario Ministry of Education.

# BUILDING A LEARNING COMMUNITY

## **THE CHILD AS LEARNER**

Young children learn best through activities that are relevant to their lives and varied enough to be challenging and engaging. Children develop their knowledge by building on their past experiences and the learning they have already acquired. Since most children believe that learning is a pleasurable experience, they are naturally inclined and even eager to learn when they first come to school.

Each child grows and develops in various interrelated areas – physical, social, emotional, cognitive, and linguistic. In order to address the full range of each child’s developmental needs, the Kindergarten program should provide opportunities for learning, self-expression, and self-discovery in a variety of areas – for example, in music, drama, games, language activities, and cooperative activities with peers.

Children develop at different rates and in different ways. Each child is unique and has individual needs. Some children will benefit more from one type of teaching strategy than another; some may need more time than others, and/or additional resources, to achieve the learning expectations. In addition, the diverse cultural and linguistic realities of the children contribute to variations in the ways in which they develop and demonstrate their learning. Children therefore need opportunities to learn in an appropriate manner and at an appropriate time in their development, and need to be given learning experiences that are within the range of things they can do with and without guidance (in their “zone of proximal development”).

## **THE ROLE OF TEACHERS**

Kindergarten teachers perform a complex and multidimensional role. They are responsible for implementing a program that is thoughtfully planned, challenging, engaging, integrated, developmentally appropriate, and culturally and linguistically responsive, and that promotes positive outcomes for all children. A developmentally appropriate Kindergarten program is challenging, but has expectations that are attainable for most children. The program should be flexible enough to respond to individual differences and should be consistent with children’s ways of thinking and learning. In order to support the continuum of learning from one grade to the next, Kindergarten teachers need to be aware of the curriculum expectations for Grade 1 and later primary grades. Knowledge of the literacy and numeracy continua, in particular, is critical for teachers as they lay the foundation for learning.

Teachers should use reflective practice, planned observation, and a range of assessment strategies to identify the strengths, needs, and interests of individual children in order to provide instruction that is appropriate for each child (“differentiated instruction”). Teachers should plan whole-class instruction, small-group learning, independent learning, and activities at learning centres. There should also be a balance between teacher-initiated and child-initiated activities – times when the teacher guides the children’s learning and times when children are given opportunities to choose activities to demonstrate their knowledge. Learning experiences should promote integrated learning and allow children to handle, explore, and experiment with a variety of materials that are familiar to them or that they can connect to everyday life. Teachers should also use their knowledge of the social and cultural contexts in which the children live to develop and provide learning experiences that are meaningful, relevant, and respectful.

Consultations with parents,<sup>2</sup> caregivers, resource teachers, teacher assistants, early childhood educators, and children themselves are an important part of the complex process of program planning. Teachers should work with these partners to gather and share information on the strengths, needs, interests, abilities, and learning styles of the children in the class, so that they can better select materials and resources and can plan and organize appropriate learning experiences.

In their relations with families, teachers can play an important role in facilitating the significant transition that children face between their home and the school environment. Ongoing communication between families and teachers results in a smoother transition for children, and is a key strategy in building bridges between home and school. Teachers also need to be culturally aware, and should encourage parents to become involved in school life and to take an active part in their child’s education.

## THE ROLE OF PARENTS

Children perform better in school if their parents are involved in their education. Parents can do many things to support and be involved in their child’s learning – for example, they can provide encouragement and express interest in their child’s education. Parents can expect that teachers will be culturally aware and sensitive to the school-community relationship and that teachers will support parental involvement in school life. One purpose of this document is to inform parents about what their children are learning and why this learning is important. This awareness will further enable parents to communicate with teachers, to offer relevant information, and to ask questions about their child’s progress. Knowledge of their child and awareness of the teacher’s observations will also help parents to interpret the assessment of their child’s learning and to work with the teacher to improve and facilitate their child’s progress. Participating in parent conferences, working on the school council, talking with their child about life at school, and reading with their child are some of the many ways in which parents can take an active part in their child’s education.

## THE ROLE OF PRINCIPALS

The principal works in partnership with teachers, parents, and caregivers to ensure that each child has access to the best possible educational experiences. To support children’s learning, principals should ensure that the Kindergarten program in their school is based on developmentally appropriate practices, and that it reflects research-based, pedagogically sound practices that support all children through the use of appropriate instructional approaches and resources.

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2. In this document, *parent(s)* is used to refer to parent(s) and guardian(s).

Principals also play an important role in building professional learning communities that promote collaboration, reflection, and growth, and that enhance teaching and learning in all areas of the Kindergarten program.

Because developing partnerships with parents and the community is very important, the principal should ensure that open lines of communication exist between the school, parents of Kindergarten children, and local educational partners (e.g., childcare centres). Ongoing communication with all educational partners will help to encourage active and positive participation so that children become successful learners.

## **THE ROLE OF COMMUNITY PARTNERS**

It is important that principals and teachers identify the strengths, needs, and unique characteristics of the community in order to maximize parents' participation in their children's school life. By welcoming and including a child's family members and other caregivers, teachers and other members of the school staff can encourage them to become supportive partners in the child's education. In a multilingual community, it is also helpful to arrange for interpreters to be available so that school staff can gather important information and establish good relationships. By promoting a philosophy of teamwork and respect, schools can build very positive partnerships. Parents and other family members should be encouraged to participate in day-to-day school activities and other events, such as family literacy and numeracy evenings, field trips, and activities with "reading buddies".

Further support for planning entry to school may be found in the ministry's resource document entitled *Planning Entry to School: A Resource Guide, 2005*.

# THE LEARNING PROGRAM

The Kindergarten program is designed to help children build on their prior knowledge and experiences, form concepts, acquire foundational skills, and form positive attitudes to learning as they begin to develop their goals for lifelong learning. It is also designed as the foundation for a continuum of learning from Kindergarten to Grade 8. Existing programs and procedures should be reviewed to ensure that they are consistent with the expectations that children are expected to achieve by the end of Kindergarten. Boards will decide how the expectations can best be achieved within the total Kindergarten program that they offer.

The knowledge and skills that the program is intended to help children develop are outlined in the learning expectations section of this document on pages 29–59.

## LEARNING EXPECTATIONS

The learning expectations outlined in this document represent the first steps in a continuum of programming from Kindergarten to Grade 8. They describe learning achievements that are appropriate for young children and that provide the foundation for successful future learning experiences. Learning expectations are given for six areas of learning – Personal and Social Development, Language, Mathematics, Science and Technology, Health and Physical Activity, and The Arts.

Programs based on the learning expectations must take into consideration the widest possible range of children’s life experiences and situations. The expectations are not meant to be a set of discrete skills to be developed. They represent a range of ways of thinking at certain stages in young children’s development, and they contain a continuum of concepts and skills that are appropriate for Kindergarten children, including critical thinking skills.

Two sets of expectations are listed for each area of learning, as follows:

- *overall expectations*, which describe in general terms the knowledge and skills that children are expected to demonstrate by the end of Kindergarten
- *specific expectations*, which describe the knowledge and skills in greater detail

### Overall Expectations

Children in Kindergarten programs are expected to demonstrate achievement of the overall expectations for each of the six areas of learning by the end of the Kindergarten years. The expectations are not designed to address Junior and Senior Kindergarten separately. Since children entering Kindergarten vary in their levels of development and previous learning experiences, it is likely that they will demonstrate a considerable range of achievement as they



progress towards meeting the overall expectations for the end of Kindergarten. For some, the process will be more challenging than for others. It is therefore important that teachers closely monitor the progress of all children in order to provide instruction that will enable all children to reach their full potential. For example, if a child is having difficulty making progress, the teacher needs to adjust instruction on the basis of ongoing assessment in order to meet the needs of the child. Similarly, if a child has already achieved some of the stated expectations for Kindergarten, the teacher should provide opportunities that deepen and extend the child's learning. Some children may enter Kindergarten already able to demonstrate achievement of the expectations of the program. These children would need differentiated instruction from the outset.

## Specific Expectations

The specific expectations indicate in more detail what children may be expected to demonstrate *as they progress through the Kindergarten years* – that is, through both Junior and Senior Kindergarten. The specific expectations are grouped under subheadings (e.g., Social Relationships, Reading, Visual Arts) within the six areas of learning. These subheadings help to organize particular aspects of the knowledge and skills in those areas, and serve as a guide for teachers as they plan the learning program. This organization of expectations in subgroups is not meant to imply that the expectations in any one group are achieved independently of the expectations in the other groups. The subgroupings are intended to help teachers focus on particular aspects of knowledge and skills as they develop and present various lessons and provide instruction for the children. Since not all young children will learn in the same way at the same time, the range of achievement of the specific expectations will vary according to each child's stage of development.

### Examples in Specific Expectations

Many of the specific expectations are accompanied by examples. There are various kinds of examples – some indicate progression, while others are samples of learning contexts, “teacher prompts”, “student talk”, or problems. Some examples may also be provided to emphasize diversity or a variety of perspectives. In all cases, the examples are intended as suggestions for teachers rather than as an exhaustive or mandatory list. Teachers do not have to address the full list of examples. They may incorporate the examples into their lessons, or they may use other topics or approaches that are relevant to the expectation. Several types of examples are discussed below.

**Examples Indicating Progression.** In a number of cases, the examples are based on a developmental progression. The word *initially* is used to indicate what a child might say or do at the beginning of the learning process and the word *eventually* to indicate a more complex understanding of the concept or skill in the expectation at the end of Kindergarten. The following are some examples:

- [children] use illustrations to support comprehension of texts that are read by and with the teacher (e.g., *initially*: use the information in the pictures in a storybook as they tell the story; *eventually*: use pictures to support predictions and to confirm the meaning of a word)
- [children] pose questions and make predictions and observations before and during investigations (e.g., *initially*: explore freely; *eventually*: pose questions and discuss their observations with teacher guidance)

**Sample Contexts.** For some expectations, examples are provided of possible contexts or different ways in which children may demonstrate their learning. It should be noted that individual children are not required to demonstrate their learning in all of the suggested contexts.

**Teacher Prompts.** Teacher prompts are included to provide teachers with some possible methods to help children learn by building on what they already know or by deepening their thinking and responses. Teachers are not required to use the teacher prompts supplied. They may incorporate the teacher prompts into their lessons, or they may use others that are relevant to the expectation or the children in their class. The following are some examples of teacher prompts:

- “What would happen if we added snow to water?”
- “Let’s mark how far your car travelled past the ramp this time. What could you change to make the car go farther?”

**Student Talk.** These are examples of what a child might say when engaged in an activity alone or with others, and are offered to provide further clarification of the variety of ways in which children demonstrate their knowledge and skills. They illustrate how children might articulate observations or explain their thinking related to the knowledge and skills outlined in the expectation. These examples are included to emphasize the importance of encouraging children to talk about what they are learning, as well as to provide some guidance for teachers on how to model language use and the processes of thinking and reasoning for the children. As a result, the examples given may not always reflect the level of language actually used by the children.

**Sample Problems.** For some expectations, examples of possible problems are provided. Teachers are not required to use the sample problems supplied. They may incorporate the sample problems into their instruction, or they may use other problems that are relevant to the expectation.

# ASSESSMENT, EVALUATION, AND REPORTING

Young children show their understanding by doing, showing, and telling. Teachers need to use assessment strategies of observing, listening, and asking probing questions in order to assess and evaluate children's achievement.

*Assessment* is the gathering of information through observable evidence of what a child can do, say, and apply. *Evaluation* involves the judging and interpreting of the assessment data to determine the child's progress in achieving the overall learning expectations.

Observation is the most important aspect of assessment in the Kindergarten classroom and should be an integral part of all other assessment strategies. Assessment is the key to effective teaching and is the starting point for instruction in the Kindergarten program. The assessment of a child's achievement is intended to improve the child's learning. Teachers need to continually observe, monitor, document, and assess children's learning, and regularly report on children's progress towards the achievement of the Kindergarten expectations to parents and the children themselves.

Teachers should recognize that, because of the many factors that influence both learning and assessment, the degree of success with which children will achieve the Kindergarten expectations will vary widely from child to child. Not only will children enter Kindergarten with varied social realities and experiences, but they will also leave it demonstrating a range of achievement of the Kindergarten expectations. It is the responsibility of the teacher to meet the needs of all children in the Kindergarten years.

All program expectations must be accounted for in instruction, but *evaluation will focus on children's achievement of the overall expectations*. A child's achievement of the overall expectations is evaluated on the basis of his or her achievement of related specific expectations. The overall expectations are broad in nature, and the specific expectations define the particular content or scope of the knowledge and skills referred to in the overall expectations. The specific expectations will assist teachers in describing the range of behaviours, skills, and strategies that children demonstrate as they work towards achieving the overall expectations. Teachers will use their professional judgement to determine which specific expectations should be used to evaluate achievement of the overall expectations and which ones will be the focus for instruction and assessment (e.g., assessment through direct observation) but not necessarily evaluated.

## PRINCIPLES UNDERLYING ASSESSMENT AND EVALUATION

Kindergarten children are in their first years of school and are going through the process of adjusting to the school environment. They should be given ample time to demonstrate their achievements through varied learning opportunities that are appropriate for their stage of development and that are within the range of things they can do with and without guidance (in their zone of proximal development). Teachers should also take into consideration that the period of adjustment to school is longer for some children than for others.

Young children will demonstrate their learning in many different ways. Their success in demonstrating what they know or are able to do will also vary, depending on such factors as the time of day, the situation, the type of questions asked, familiarity with the content, and facility with the language of instruction. To allow for the range of influences that may affect a child's performance at any one time, Kindergarten teachers should assess the child's learning on an ongoing basis in the context of everyday classroom experiences, using a variety of strategies and tools.

Assessment strategies should encourage children to show what they know and can do, rather than focus on what they do not know or cannot do. An assessment that focuses on what children can do takes into account the developmental stage of the child. Assessment enables teachers to determine how well their planned activities and teaching strategies are working, and to make any changes needed to enable Kindergarten children to achieve the learning expectations. Some children may need differentiated instruction to meet their individual needs.

## METHODS OF ASSESSMENT AND EVALUATION

The methods used for assessing and evaluating children's learning should be clearly identified and based on the learning expectations. Assessment that supports children's learning will enhance teachers' observations and understanding of children's knowledge. Teachers need to make careful choices about assessment methods to ensure that the methods are developmentally, culturally, and linguistically appropriate. Assessment should be frequent, well planned, and well organized, so that teachers are able to assist each child in progressing towards achievement of the overall expectations.

In the early years, Kindergarten in particular, the main focus of assessment should be on informal diagnostic assessment of prior learning and on formative assessment that is intended to support ongoing learning and to determine instructional methods. For example, before beginning a series of planned activities on patterning, a teacher may observe children working with pattern blocks, and ask general questions to determine their interests, vocabulary, and knowledge. The teacher then introduces a planned activity and continues to observe the children as they work on the task in order to determine what individual children understand and what the direction for further teaching will be.

### Observation in the Classroom

Observation, as well as the documentation of observations, is the most important method for gaining assessment information about a young child as he or she works and interacts in the classroom. Observation should be the primary assessment strategy used in Kindergarten. Teachers should focus their observations on specific skills, concepts, or characteristics, as described in the learning expectations, and record their observations. Daily observation

should include both planned observations and on-the-spot observations. There are various ways of documenting observations, such as using anecdotal notes, checklists, and rating scales. Assessment strategies and tools might include the following:

- portfolios
- developmental continua
- age and stage-of-development charts
- videotapes and/or photographs
- records of reading behaviours
- conferences
- self-assessment and peer assessment
- writing samples

### **Use of Observations of Parents**

Communication with children and their parents throughout the assessment and evaluation process is critical to successful learning. Teachers provide information for parents to assist them in understanding the assessment and evaluation process, including the ways in which assessment helps identify a child's strengths and needs and the next steps for program planning.

It is especially important in the early years for parents to be involved in discussions regarding their child's progress. The teacher should gather as much information as possible from the parents and consult with them when assessing the child's adjustment to school and progress towards achievement of the learning expectations. Parents should be invited to observe their child in the classroom setting and to discuss their observations with teachers. Also, since parents are familiar with their child's knowledge and skills in the home setting, teachers should invite parents to share their observations of their child informally throughout the school year. Other professionals who may be involved with the child should also participate in program decisions, provided that the appropriate permission has been granted.

### **REPORTING**

Teachers will communicate assessment and evaluation of achievement to the parents, the child, and others involved in the child's learning. When reporting on what children have achieved, teachers will include the assessment and evaluation methods used, the expectations on which achievement was assessed, and the purpose of the assessment.

Reporting throughout the Kindergarten years must always indicate the child's growth and achievement in relation to the learning expectations for the end of Kindergarten. Reporting should reflect achievement in the skills and strategies that the children are developing as they progress through the Kindergarten years.

The reports must reflect evaluation of achievement in all six areas of learning. Reports should include anecdotal comments on the child's achievement in relation to the overall expectations and the next steps for the teacher, as well as next steps for the parents to assist them in supporting their child's learning. Reporting should be ongoing and should include a variety of formal and informal means, ranging from formal written reports and discussions with parents and the child to informal notes to parents and conversations with them.

# TEACHING/LEARNING APPROACHES

Kindergarten programs need to consist of a balance of investigation or exploration, guided instruction, and explicit instruction. Kindergarten children need many opportunities to investigate and explore. These experiences allow children to build on their existing knowledge, create and clarify their own new understandings, and experience a variety of approaches to a problem or question. In investigation and exploration, children's autonomy is high, and teachers should observe, listen, and question in order to provide the children with the support they need using the instructional strategy of scaffolding. In guided instruction, learning experiences will be thoughtfully planned and guided by the teacher. While providing guidance, the teacher should be flexible in order to make the best use of alternatives and strategies that are generated by the children. Explicit instruction is used by the teacher to clarify steps, extend an idea in a particular direction, or demonstrate a skill that may be used in a broader context.

Assessment is the key to effective teaching and is the starting point for instruction in the Kindergarten program. A well-planned Kindergarten program provides teachers with many opportunities for ongoing observation and assessment of children's strengths, needs, and interests. On the basis of this ongoing assessment, teachers should plan instruction to help children build on what they know and extend their thinking. For example, teachers may pose an open-ended question, give a direction, ask a child to demonstrate a familiar concept in a new way, or encourage a child to try a new activity.

The sections that follow identify the different types of learning experiences that should be offered and the teaching/learning approaches that should be used in developmentally appropriate Kindergarten programs.

## **LEARNING THROUGH INQUIRY**

Most children are naturally curious about their surroundings. They have an interest in exploring and investigating to see how things work and why things happen. Children have an innate sense of wonder and awe and a natural desire for inquiry. Kindergarten programs can capitalize on children's natural curiosity and their desire to make sense of their environment. However, curiosity on its own is not enough. The guidance of a thoughtful teacher is essential to enable children to learn through inquiry. Teachers should use inquiry-based learning to build on children's spontaneous desire for exploration and to gradually guide them to become more focused and systematic in their observations and investigations.

Many different skills make up inquiry-based learning for children, and children need many opportunities to develop and use these skills as they progress through the Kindergarten years. Inquiry skills should not be taught in isolation, but integrated into interesting topics and ideas

and in children’s ongoing play. Some skills need explicit teaching (e.g., using a magnifier, posing questions, analysing data, using graphic organizers), whereas others may be reinforced or practised using different types of activities and investigations (e.g., sorting and categorizing).

Elements of the Kindergarten child’s inquiry process	When children are engaged in the inquiry process, they:	When teachers are modelling or supporting the inquiry process, they:
<b>Initial Engagement</b> – noticing, wondering, playing	<ul style="list-style-type: none"> <li>• raise questions about objects and events around them</li> </ul>	<ul style="list-style-type: none"> <li>• observe and listen</li> </ul>
<b>Exploration</b> – exploring, observing, questioning	<ul style="list-style-type: none"> <li>• explore objects and events around them and observe the results of their explorations</li> <li>• make observations, using all of their senses, and generate questions</li> </ul>	<ul style="list-style-type: none"> <li>• act as facilitators to guide children with thoughtful, open-ended questions</li> <li>• encourage children to observe and talk among themselves and to the teacher</li> </ul>
<b>Investigation</b> – planning, using observations, reflecting	<ul style="list-style-type: none"> <li>• gather, compare, sort, classify, order, interpret, describe observable characteristics and properties, notice patterns, and draw conclusions, using a variety of simple tools and materials</li> </ul>	<ul style="list-style-type: none"> <li>• provide a rich variety of materials and resources, and strategically question and observe children to clarify, expand, or discover the children’s thinking</li> <li>• model how to plan, observe, and reflect</li> </ul>
<b>Communication</b> – sharing findings, discussing ideas	<ul style="list-style-type: none"> <li>• work individually and with others, share and discuss ideas, and listen to new ideas</li> </ul>	<ul style="list-style-type: none"> <li>• listen to the children to help them make connections between prior knowledge and new discoveries</li> <li>• demonstrate how to share and discuss new ideas</li> </ul>

Taking into consideration the strengths, needs, and interests of the children in the class, the teacher should model the inquiry process and pose questions that encourage, support, and extend the children’s learning. For example, the teacher could ask such questions as the following:

- “What would happen if...?”
- “How would we find out?”
- “What are the places in our school yard where we might find worms?”
- “What ways can you use to get the water from one container to another?”
- “I wonder why your measurement is different from Jasmine’s.”

Children begin to ask questions that lead to exploration and investigation. For example, they may ask such questions as the following:

- “How can this car go faster down the ramp?”
- “Where are the biggest puddles?”
- “How many legs does a spider have?”
- “What happens if I mix blue and red paint?”

Children begin to communicate ideas and questions while they are experimenting and investigating by describing materials they used, indicating a problem they might have had, or beginning

to listen to their peers or offer suggestions to them. They also learn to make predictions and draw conclusions, such as the following:

- “I think if I use a bigger block on the bottom, my tower won’t break. See, it worked! I used this big block and it didn’t fall over.”
- “I think when I mix these paints they will change colour. They made green.”
- “I thought it would take six footsteps, but it took ten.”

## LEARNING IN REAL-LIFE CONTEXTS

Using real-life contexts in which to develop activities for the Kindergarten program is a highly effective way of motivating young learners. Children grasp ideas more easily and more effectively and maintain their interest in school when they have an educational program that enables them to connect their learning to their own lives and the world around them. Kindergarten programs should emphasize the interconnected learning that occurs when children are exposed to real-life situations and activities in the classroom, home, school, and neighbourhood. For example, a trip to the grocery store can develop literacy (e.g., reading signs and labels), numeracy (e.g., finding different ways numbers are used, looking for shapes), and social skills (e.g., listening to other people’s ideas, taking turns), and can provide an opportunity to acquire nutritional information. Mathematics often becomes abstract too early for children. Developing concepts within a real-life context allows children to bridge the gap between the concrete and abstract. For example, children need many experiences of investigating the idea that three blocks and two more blocks make five blocks before they will understand  $3 + 2 = 5$ .

### Integrated Learning

Using real-life contexts can lead to more effective integration of learning throughout the Kindergarten program. Integration can provide opportunities for children to explore concepts and to develop and apply skills. There are many models for integration. One model for integrated teaching involves the presentation of concepts to children in a variety of contexts. For example, the mathematical concept of pattern may be presented and developed in activities related to music, stories, fabrics, and natural objects.

Meaningful integration deepens children’s understanding of the skills and concepts in each of the subjects that are involved. Through meaningful integration, children can be encouraged to generate new connections and to expand their existing understanding. Integration also helps children see how the knowledge and skills developed in one area can be relevant to other areas.

### Integration of the Arts Across the Program

Effective integration of arts activities across the Kindergarten program helps support the learning styles, interests, and strengths of individual children. Integrating the arts with other areas of learning allows children to make meaningful connections between program areas, and can be highly motivating. For example, important links can be made between music and language development. Children can gain an appreciation of the rhythm and flow of language through song. Musical instruments allow children to experience rhythm and beat and to feel the sounds in rhyming stories, songs, or poems. Drama offers children a variety of opportunities to retell stories using props, puppets, masks, and costumes. Drama also gives children the opportunity to respond in role and to take on roles in which they express different points of view, and thus supports the development of empathy. Creative movement and dance provide a vehicle for response and for interpretation of something children have heard, seen, or felt.



Through sculpting, painting, constructing, and drawing, children not only express their thoughts and feelings, but may also articulate their learning about their community and place in the world.

Participating in and responding to appropriate arts experiences gives children opportunities to reflect on their own experiences and those of others. These activities can enhance children's self-concept and increase their sense of accomplishment, and can help them develop their oral language ability and their ability to respond to others.

The outdoor world also provides an abundance of resources and materials for supporting learning through the arts. Children can discuss the lines, shapes, or textures that they have observed in a field, local park, or school yard. They can listen for different sounds in the environment and watch how animals move, and then imitate the sounds and movements in music and dance activities. They can create art works and musical instruments using found and recycled materials – for example, they can use leaf and shell rubbings in collages.

Art galleries, theatres, museums, and concert venues (where available) provide rich environments for field trips and for exploration of the local community and its resources. Alternatively, local artists, musicians, or dancers could be invited into the school. A number of programs – such as the Ontario Arts Council's Artists in Education program – can assist teachers in more fully integrating arts and cultural programming into the classroom.

## LEARNING THROUGH EXPLORATION

Young children actively explore their environment and the world around them through a process of learning-based play – for example, manipulating objects, acting out roles, and experimenting with various materials. Play is a vehicle for learning. It provides opportunities for learning in a context in which children are at their most receptive. Play and work are not distinct categories for young children, and learning and doing are also inextricably linked for them. It has long been acknowledged that there is a strong link between play and learning for young children, especially in the areas of problem solving, language acquisition, literacy, numeracy, and social skills. Play, therefore, has a legitimate and important role in Kindergarten and can be used to further children's learning in all areas of the Kindergarten program.

Current brain research confirms that opportunities for children to learn through play impel the development of multiple sensing pathways in the brain. A Kindergarten program that is designed with planned opportunities for learning-based play offers sensory stimulation that the child absorbs and assimilates into core brain development.

Through learning-based play, children represent their knowledge and understanding of the world and apply new learning that they are acquiring. Play provides a meaningful context for children's language development. In the context of play, children can learn the meaning of words that are confusing, hear new words, and use words in both new and familiar ways. Children should have many opportunities to explore materials and make decisions with the support of an adult who knows how and when to intervene. Children also need opportunities to engage with their peers in play activities of their own devising, through which they can express themselves and explore things of special interest to them. It is important that teachers assess what and how children learn through play by observing, documenting, and analysing their observations of children's play. By using their observations, teachers can stimulate children to create, solve problems, and think critically. For example, teachers can do the following:

- acknowledge what the children are doing in order to sustain and extend their interest (“I see that you have lined all your cars up in a row.”)

- introduce new vocabulary (“I wonder what happens to the water if you put it in a funnel.”)
- guide children to make connections (“What does this make you think of?”)
- lead children to reflect on their learning (“I wonder what would happen if...”  
“How did you figure that out?”)

Teachers should plan activities at the learning centres that will help children achieve the learning expectations, and should make changes to activities and materials on the basis of their assessments and the needs and interests of the children. Teachers should also monitor play activities carefully and be available to assist with or extend the activities as appropriate. The following are a few examples of ways in which teachers can support children’s learning in various areas through play:

- interacting with the children at the learning centres to introduce new vocabulary in all areas of learning
- placing tubing, funnels, water pumps, and water wheels at the water centre to encourage children to explore and experiment with the properties of water and to investigate various ways in which forces make things move (science and technology, expectations 7 and 10)
- taking on the role of a customer in a restaurant and asking for the bill in order to encourage children to engage in literacy and numeracy activities for real-life purposes (language, expectation 27; mathematics, expectation 5)

## LANGUAGE DEVELOPMENT AND LITERACY

### Oral Language Development

Oral language is the basis for literacy, thinking, and socialization in any language. All young children need learning experiences that help them understand, acquire, and build on oral language. The foundations of language development and literacy begin to be established at birth and continue to be built through interaction and communication with adults and other children at home, in child care, in the community, and at school. To foster the language development necessary for literacy, Kindergarten programs should be rich in language-oriented activities and resources that build on prior knowledge, that are relevant to the lives of young children, and that provide opportunities for thinking, problem solving, and experimenting.

In a strong literacy program, teachers find opportunities to talk with parents about the importance of having supportive adults or siblings who listen and respond to what young children say, who read to them frequently, who have discussions with them, and who model reading and writing. Listening to someone reading stories and other kinds of texts enables children to learn new words, extend their experiences, and become familiar with the patterns, rhythms, and structures of a language. If a child’s first language is a language other than English, Kindergarten teachers should also encourage parents to continue to use their own language at home in various ways – for example, telling or reading stories in their own language – as a foundation for language and literacy development in English. It is also important to find opportunities to bring children’s first languages into the classroom – for example, by reading dual-language books or using parents or other community members as resources.

Children come to school with vastly different experiences and levels of exposure to literacy. All children are able to learn, and can benefit from classroom experiences that emphasize literacy. On the basis of ongoing assessment and observation, teachers will recognize that some children

will require additional support in the form of focused literacy instruction and experiences to develop literacy. It is important that teachers make adjustments to instructional strategies where necessary, and maintain high expectations for all children.

For further information on supporting the development of oral language, teachers may consult the ministry's resource document entitled *A Guide to Effective Instruction in Reading, Kindergarten to Grade 3, 2003*, pages 3.11–3.20.

## **Development of Reading and Writing**

Learning to read and write is essential to enable a child to succeed in school and in later life. Teachers should become familiar with the stages in the process of learning to read and write, and should use this knowledge when planning literacy programs and when assessing children's acquisition of literacy skills. In the earliest stages of literacy development, children mimic the reading process. They begin to understand what reading is and how it works. They learn that what they say can be written down. As children progress, they learn to pay attention to the way print and books work, and they learn that printed letters and words represent the sounds and words of oral language. They become aware that some words rhyme or start or end in the same way, thus developing phonological awareness. They also begin to share their ideas and responses to texts in a variety of ways, learn that writing can communicate a message, and begin to explore different purposes for writing. When they begin to write, they include pictures and symbols, and eventually familiar or high-frequency words. They also often use approximate spelling for words that is based on their ability to hear, identify, and manipulate sounds (phonemic awareness) and on their knowledge of letter-sound correspondence (phonics).

For further information on developmental stages in reading and writing, teachers may consult the ministry's resource documents entitled *A Guide to Effective Instruction in Reading, Kindergarten to Grade 3, 2003*, pages 12.37–12.40, and *A Guide to Effective Instruction in Writing, Kindergarten to Grade 3, 2005*, page 1.6.

## **Learning Through Explicit Instruction**

In the Kindergarten classroom, teachers provide clear, direct, purposeful teaching and modelling of specific concepts, skills, and strategies in a variety of settings, including large and small groups and individual activity. In explicit instruction, the teacher explains what a strategy is, why it is used, and when to use it; models how to use it; and guides children as they practise it. For example, in teaching children a beginning reading strategy, such as matching voice to print, the teacher identifies the strategy and models it during modelled reading, providing students with maximum support. Gradually the teacher invites children to apply their new learning during shared reading in large or small groups, and guides children in using voice-to-print matching as they interact with such texts as signs, labels, or independent-reading texts in small groups or independently at learning centres. The teacher provides feedback as necessary.

## **Strategies for Developing an Effective Literacy Environment**

Children who are given frequent opportunities to listen and respond to stories, poems, songs, and rhymes in the classroom become motivated to learn the functions and features of print. Teachers should model beginning reading and writing strategies by "thinking aloud". With encouragement and intentional instruction, children will begin to demonstrate such literacy skills as repeating words, naming characters, and identifying signs, labels, names, letters, and letter sounds. Some children will also begin to demonstrate their thinking and understanding on paper. Generic worksheets, however, should be used with caution; they are rarely effective

because their focus is narrow and they provide only limited assessment information on the child's level of understanding. Children will also write for a variety of purposes – for example, they may write brief notes to friends, make grocery lists, or write numbers to record the number of blocks they used.

Children also need many opportunities to pose and answer questions, participate in discussions, and classify information in order to develop their capacity for metacognition and their ability to use higher-order thinking skills involved in critical thinking. For example, after reading about a social issue that is important to children, the teacher may say “Someone wrote this text. Who is it written for? Let's look at it from the point of view of...”. By engaging in such discussions, children will have an opportunity to question their understanding of issues that arise in the classroom, in a book, or among their classmates.

Children should be encouraged to do independent reading and writing. In planning all such activities, teachers should use their knowledge of the stages of development in oral language, reading, and writing. They should also provide children with appropriate materials when they are to be engaged in free exploration, focused exploration, and guided activities.<sup>3</sup>

Kindergarten programs should provide opportunities for children to listen to poems, stories, and non-fiction texts for both enjoyment and information. Children should also have opportunities to respond to a variety of materials that are read aloud to them and to demonstrate awareness of written materials, print conventions (concepts of print), and language patterns. Teachers should provide children with many opportunities to explore texts independently, to retell stories, and to internalize new learning. Teachers can plan brief, focused, daily experiences that build on a particular concept or set of ideas. They also need to plan intentional and engaging literacy instruction during the day. They can ensure that significant literacy learning is included in play, daily routines, and classroom experiences. Teachers can also make use of drama, music, visual arts, and media texts to help children develop their communication and literacy skills. In so doing, teachers can create an effective environment to support young children's learning and development of literacy.

## EARLY NUMERACY DEVELOPMENT

### Learning in Real-Life Contexts

Most young children come to school already knowing a great deal about mathematics. Children bring with them an intuitive knowledge of mathematics, which they have developed through curiosity about their physical world and through real-life experiences. For example, they bring conceptual understanding from their daily experiences with manipulating objects (e.g., fitting different sizes and shapes of a construction toy together), making comparisons (e.g., “I'm taller than you”), making observations (e.g., “This bag is really heavy”), and asking questions (e.g., “Who is taller?” “Who has more cookies?” “How big is it?”). Teachers should use this prior knowledge as a starting point in developing the critical foundational learning of mathematical principles and concepts that supports achievement in mathematics in later years.

It could also be said that, upon entering school, most children are interested in learning to persist, to try something new, and generally to engage in problem solving. The teacher plays a

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3. An example of a guided activity is guided reading. Because, in guided reading, children read a text with a minimal amount of teacher support, a decision about whether to use guided reading in Kindergarten should be based on the learning behaviours, strengths, and needs of individual children. When children understand print concepts, know letters and sounds, and can recognize some sight words, they are ready to participate in guided reading. Therefore, guided reading is not appropriate for children who are still developing these skills. These children require group shared-reading lessons to meet their needs.

critical role in fostering a positive attitude towards mathematics by valuing a child's early attempts at problem solving, by sharing and celebrating the child's learning, and by encouraging in each child a love of mathematics.

Learning in mathematics is no different from learning in other areas of the program in that young children learn best through experiences that are connected and integrated. Children are more motivated to solve problems when the problems are the real-life problems of the classroom. Attempting to solve such problems engages children in posing their own questions and finding a variety of solutions. When the mathematical problems they are exploring are connected to real life, the problems provide a vehicle for children both to apply what they know and to develop new strategies. For example, as children measure the growth of their plants, they begin to see the connections between mathematics and their everyday lives, and they strengthen their understanding in both mathematics and science.

Teachers should plan programs that build on children's intuitive knowledge of mathematics and make use of real-life contexts. The programs should allow children to explore mathematics and to communicate in meaningful ways with both the teacher and their peers. Teachers should select learning materials that are appropriate for the level of the children's understanding and the focus of the learning expectations. Children should be encouraged to identify, explore, and discuss mathematics in books that they read, in situations that occur in the classroom (e.g., finding ways of making sure that all children have a place to put their boots), and in situations outside the classroom (e.g., identifying shapes or numbers while on a walk). Teachers should continually help children clarify what they already know and what they need to do next. On a daily basis, teachers can model the formulation of mathematical problems, pose questions, and provide opportunities for children to pose questions, and then provide time for investigating possible answers and solutions.

### **Developmental Aspects of Learning Mathematics**

When planning learning experiences, teachers should consider children's cognitive, linguistic, physical, social, and emotional development. The most successful learning takes place when the teacher plans mathematical experiences that are based on an understanding of the child's total development. The child needs to have the cognitive ability to do the mathematical activity; needs to be able to understand the language of instruction, including the mathematical vocabulary; needs to have sufficient fine-motor control to manipulate the materials; and needs to be emotionally mature enough to deal with the demands of the activity so that frustration does not set in.<sup>4</sup> Since all children will demonstrate a developmental progression in the understanding of foundational mathematical concepts, teachers need to assess the level of development of each child, plan activities that are appropriate for that child, and decide when and how to intervene if the child has difficulties solving a problem.

### **Strategies for Developing a Community of Mathematics Learners**

When planning for effective learning experiences in mathematics, teachers should include a balance of the following elements: activating prior knowledge, engaging in the mathematics, reflecting on the process, and celebrating children's learning. Teachers can begin a learning experience by encouraging children to use their prior knowledge to solve a problem. By observing how the children proceed, teachers gain insight into what the children already know, and can plan further learning experiences to ensure that the children will have the necessary tools to develop an understanding of the concept being investigated. For Kindergarten

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4. Adapted from ideas in C. Sophian, "A Prospective Developmental Perspective on Early Mathematics Instruction", cited in *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario, 2003*, p. 8.

children, these learning experiences may include reading a story or poem that explores a mathematical concept, asking questions, engaging in problem solving as a group, or dramatizing a number poem or story.

For Kindergarten children, learning experiences should be hands-on and embedded in a context that is of interest to the children. Children need to be able to explore and investigate materials and concepts in concrete ways. Individual learning is supported and extended by both the teacher and peers. Children should be encouraged to reason, investigate ideas, extend understanding, reflect, and make generalizations. They should also be encouraged to begin to represent their mathematical understandings in ways that are meaningful to them. Some children may begin to represent their thinking on paper, often using pictures and/or numbers and some words; others may use concrete materials. Generic worksheets, however, should be used with caution; they are rarely effective because their focus is narrow and they provide only limited assessment information on the children's level of understanding. Activities need to be open-ended so that the children can demonstrate their understanding of a concept in a variety of ways. Some children, for example, demonstrate their understanding of the concept of pattern by creating a pattern, but they may not be able to explain the pattern. Some children may sort the zoo animals according to type, but may need the teacher's guidance to articulate their sorting rule; others may be able to sort in multiple ways and explain their reasoning. In all cases, however, children need to be engaged in doing mathematics, talking about it, listening to others talk, and showing their results and solutions.

Young children have the curiosity and the capability to engage in mathematical thinking and learning. Reflecting on their experiences enables children to consolidate learning. Children need to experience mathematics concepts in depth through revisiting and repeating investigations over a long period of time. This repetition also allows teachers an opportunity to identify gaps in children's learning and provide additional support. Teachers can help children develop and consolidate their understanding through talking, sharing approaches, and celebrating successes, and by encouraging children to demonstrate, describe, and explain, as well as to make connections and identify relationships.

Teachers can create an effective environment to support young children's learning of mathematics by planning daily hands-on experiences that focus on a particular mathematical concept and by identifying and embedding significant mathematics learning experiences in play, daily routines, and classroom experiences.

# SOME CONSIDERATIONS FOR PROGRAM PLANNING

## DEVELOPMENTAL CONSIDERATIONS FOR KINDERGARTEN CHILDREN

Young children come to school with an enormous capacity to learn. Important learning and development occur between birth and six years in all areas of human functioning – physical, social, emotional, cognitive, and linguistic. Children develop knowledge and skills at varying rates and through various means. Each child has unique strengths, interests, and needs that require teachers to adjust teaching methods and materials accordingly.

In addition to their own observations and the information provided by parents, teachers can use the information available through the Early Identification of Children’s Learning Needs process to determine individual children’s level of development, learning abilities, and needs. This identification procedure is part of an ongoing assessment process that boards are required to initiate when a child first enters school.

When planning Kindergarten programs to meet the needs of individual children, teachers should consider a range of developmental assessments of individual children. The following chart offers guidance when making program decisions. The chart is not meant to be a comprehensive list, but highlights key observable behaviours in all five areas of development, and ways of taking them into consideration.

Developmental Area	Some Observable Behaviours	Program Considerations
	Children:	Teachers should:
Physical Health and Well-Being	<ul style="list-style-type: none"><li>• are active</li></ul>	<ul style="list-style-type: none"><li>• provide open space in the classroom for movement</li><li>• ask children to sit for short periods of time only</li></ul>
	<ul style="list-style-type: none"><li>• are developing the hand-eye coordination and visual acuity required for close attention to detail</li></ul>	<ul style="list-style-type: none"><li>• consider the developing physical capabilities of children when asking them to cut with some accuracy or to use a marker or pencil</li></ul>

Developmental Area	Some Observable Behaviours	Program Considerations
	Children:	Teachers should:
Physical Health and Well-Being (continued)	<ul style="list-style-type: none"> <li>• need small amounts of food that are eaten at regular intervals</li> </ul>	<ul style="list-style-type: none"> <li>• provide regular opportunities for eating healthy snacks</li> </ul> <p><i>Note:</i> Teachers must be aware of possible allergies.</p>
Social Knowledge and Competence	<ul style="list-style-type: none"> <li>• are beginning to distinguish between acceptable and unacceptable behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• support and praise acceptable behaviour</li> </ul>
	<ul style="list-style-type: none"> <li>• are just beginning to develop the capacity to relate to others</li> </ul>	<ul style="list-style-type: none"> <li>• provide models and examples of appropriate ways of solving problems (e.g., using words, making positive choices)</li> <li>• provide children with opportunities to become aware of the needs and ideas of others through discussions and sharing</li> </ul>
	<ul style="list-style-type: none"> <li>• need and enjoy social contact to develop a sense of themselves</li> </ul>	<ul style="list-style-type: none"> <li>• provide opportunities to develop social skills in a variety of contexts (e.g., in whole-class activities, at learning centres, when playing cooperatively)</li> </ul>
Emotional Maturity	<ul style="list-style-type: none"> <li>• need to feel valued</li> <li>• have their own interests and ideas</li> <li>• express feelings with actions and words</li> </ul>	<ul style="list-style-type: none"> <li>• provide opportunities for children to express their own points of view</li> <li>• provide opportunities to make independent choices</li> </ul>
	<ul style="list-style-type: none"> <li>• need others to be considerate and to attend to their personal needs</li> </ul>	<ul style="list-style-type: none"> <li>• recognize and accept individual strengths and differences</li> <li>• provide support and, as appropriate, encourage development of independence</li> </ul>
Cognitive Knowledge	<ul style="list-style-type: none"> <li>• are eager to learn</li> <li>• learn through interacting with the environment</li> </ul>	<ul style="list-style-type: none"> <li>• plan learning experiences that are concrete, active, interactive, and connected to the children's world</li> </ul>
	<ul style="list-style-type: none"> <li>• need continuity of experiences (e.g., new learning is connected to prior experiences)</li> </ul>	<ul style="list-style-type: none"> <li>• establish consistent routines</li> <li>• plan a balanced, differentiated program with appropriate learning experiences that support and promote growth for each child and that are based on the learning expectations, on assessments in all five developmental areas, and on the needs and interests of the children</li> <li>• provide opportunities for children to link new learning with prior knowledge</li> </ul>
	<ul style="list-style-type: none"> <li>• demonstrate different stages of recognition of letters and numerals along with related concepts</li> </ul>	<ul style="list-style-type: none"> <li>• provide learning opportunities and activities that enable children to work at their individual level of development (within their zone of proximal development)</li> </ul>
Communication Skills and General Knowledge	<ul style="list-style-type: none"> <li>• use language for self-regulation and for expressing needs, imagining, reasoning, and predicting</li> </ul>	<ul style="list-style-type: none"> <li>• provide opportunities for children to use and develop language in a variety of contexts and for a variety of purposes (e.g., planned oral activities)</li> </ul>
	<ul style="list-style-type: none"> <li>• speak in simple sentences and make themselves understood by peers and adults</li> </ul>	<ul style="list-style-type: none"> <li>• take into account children's stage of development in oral language<sup>5</sup></li> </ul>
	<ul style="list-style-type: none"> <li>• are beginning to develop age-appropriate knowledge about the world around them</li> <li>• learn through exploration, play, discovery, investigation, inquiry, and modelling</li> </ul>	<ul style="list-style-type: none"> <li>• create contexts through which learning can take place in ways that engage children and that build on and expand their learning</li> </ul>

5. For information on children's stages of development in oral language and reading, see *A Guide to Effective Instruction in Reading, Kindergarten to Grade 3, 2003*.



## THE LEARNING ENVIRONMENT

The key components of the Kindergarten learning environment are: the use of space in the classroom and outdoor area; the use of time during the day; and the appropriateness and variety of the resources available, including both people and materials. In planning programs, teachers should ensure that the learning environment is inclusive and that it is one in which children feel comfortable and safe, yet stimulated to learn and explore. The atmosphere the teacher creates is vital to the emotional development of the children. The environment should be one that encourages empathy, interest in trying new things, and the development of self-confidence.

Teachers plan instruction for small groups of children and for the whole class, as well as individual learning experiences that address the strengths, needs, and interests of the child and that are within the range of things the child can do with and without guidance (the child's zone of proximal development). The time and purpose for these groupings are determined by a number of factors, such as the length of time the children have been in a school setting; the strengths, needs, and interests of the children; and the focus of instruction.

Children should be provided with large blocks of time and adequate space to work at learning centres. Some examples of learning centres are the book corner, writing centre, listening centre, block centre, dramatic play centre, sand and water centres, discovery centre, mathematics centre, technology centre, puppet centre, visual arts centre, and word-study centre. At such learning centres, children demonstrate the knowledge and skills they are acquiring, and practise and apply new learning both independently and with others. While at learning centres, children learn through play, independent problem solving, and inquiry. They also learn to manage time, make choices, and demonstrate responsibility. Teachers spend time modelling and teaching children routines for the centres. Teachers also observe children at the learning centres and gather assessment information on individual children in order to plan instruction and determine appropriate materials for teaching.

The whole learning environment should be designed to meet the needs of young children and allow them to demonstrate their progress towards achieving the overall expectations in a variety of ways. In some cases, examples of materials, resources, and learning centres are mentioned in the specific expectations in order to support teachers in creating the appropriate environment for young children.

### Use of Space

When planning for the use of space in the classroom and outdoors, teachers should:

- group related centres and/or materials together (e.g., house, dramatic play, and block centres; painting, visual arts, and design and technology materials; books, dual-language books, the listening centre, a computer, and the writing centre; the mathematics centre, sand table, and water table);
- keep visual displays at children's eye level (e.g., charts, word wall, paintings);
- provide an open area for movement and/or music activities;
- plan for washroom, coat, entry, and dismissal routines and space requirements, including areas and access for students with special education needs;
- use appropriate spaces for a range of activities in the outside play area (e.g., planting, water play, gross-motor activities, science investigations);
- define small areas for dramatic play or specific activities by using dividers or shelves (e.g., house corner, writing centre, store, puppet theatre);

- plan for a large-group meeting area (e.g., for reading aloud, shared reading, interactive writing, introducing a math problem, sharing math strategies) and a place to meet with individuals or small groups;
- ensure that children with mobility issues have easy access to all areas of the classroom;
- ensure that defined areas provide spaces where children with different learning styles can feel comfortable.

## Use of Time

When planning time for large-group instruction, teachers should consider the attention span of the children, the length of time they have attended school, their familiarity with routines, and their strengths, needs, and interests, so that the time can be adjusted according to the dynamics of the group. Teachers should also ensure that routines are simple, modelled, and appropriate, and that they make the best use of the children's time.

When planning time for small-group or individual learning activities, teachers should:

- allow for revisiting or extending an activity;
- plan for a balance of teacher-initiated and child-initiated learning activities;
- plan for a daily block of time for child-initiated learning activities, ensuring that there is sufficient time for children to get involved in their activities in depth as well as time for them to organize their materials;
- consider the attention span of Kindergarten children and plan the amount of verbal instruction accordingly.

Teachers should also plan for a daily block of time for literacy and numeracy instruction. Such instruction may take place in both large and small groups.

## Use of Resources

When planning for the use of resources and materials, teachers should:

- organize and label materials, resources, and equipment to ensure that children can access and put them away safely and easily (e.g., use symbols, photo labels, and word labels in various languages, where possible, to indicate where things go);
- provide a variety of materials and resources (familiar and novel, simple and complex) for children to explore, manipulate, and use, both in learning activities and in imaginative play;
- consider the need to provide assistive devices and supportive technology and personnel for students with special education needs;
- distribute meaningful and inclusive literacy and numeracy materials throughout the classroom (e.g., provide books at the reading centre; class lists at the word-study centre; number cards to record attendance, dual-language books, writing materials, shopping lists, and newspaper flyers at the house centre; labels at the block centre; sign-up sheets for outdoor riding toys);
- have parent and/or community volunteers and older students, where possible, assist and interact with the children.

## ENGLISH LANGUAGE LEARNERS

Ontario schools have some of the most multilingual student populations in the world. The first language of approximately 20 per cent of the children in Ontario's English-language schools is a language other than English. Ontario's linguistic heritage includes several Aboriginal languages; many African, Asian, and European languages; and some varieties of English, such as Jamaican Creole. Some of the children in Ontario schools whose first language is a language other than English were born in Canada into immigrant, francophone, or Aboriginal families. Other children arrive in Ontario as newcomers from other countries; many of these children are entering a new linguistic and cultural environment when they start school in Ontario. All of these children bring a rich diversity of background knowledge and experience to the classroom.

Most English language learners (children who are learning English as a second or additional language in English-language schools) arrive with an age-appropriate proficiency in their first language. Although they need frequent opportunities to use English at school, there are important developmental and social benefits associated with continued development of their first language while they are learning English. Kindergarten teachers should encourage parents to continue to use their own language at home in rich and varied ways as a foundation for language and literacy development in English. It is also important for teachers to find opportunities to bring children's languages into the classroom, using parents and other community members as resources. Teachers may be able to meet with children's parents at Kindergarten registration. In a multilingual community, it is also helpful to arrange for interpreters to be available at meetings with parents in order to gather important information and establish a positive partnership with parents.

In planning programs for children with linguistic backgrounds other than English, teachers need to recognize the importance of the orientation process, understanding that every learner needs to adjust to the new social environment and language in a unique way and at an individual pace. For example, some Kindergarten children who are in an early stage of English-language acquisition may go through a "silent period" during which they closely observe the interactions and physical surroundings of their new learning environment. They may use body language rather than speech, or they may use their first language until they have gained enough proficiency in English to feel confident of their interpretations and responses. Students thrive in a safe, supportive, and welcoming environment that nurtures their self-confidence while they are receiving focused literacy instruction. When they are ready to participate, in paired, small-group, or whole-class activities, some children will begin by using a single word or phrase to communicate a thought, while others will speak quite fluently.

With exposure to the English language in a supportive learning environment, most young children will develop oral fluency quite quickly, making connections between concepts and skills acquired in their first language and similar concepts and skills presented in English. This is especially true if they receive consistent, attentive, and caring support and instruction from the teacher.

Kindergarten teachers play an important role in English-language acquisition by providing a model for English language learners through their own use of simple, concrete language. They can ensure that meaning is conveyed by using pictures, gestures, and vocal intonation. They can also give English language learners opportunities to practise saying words and phrases through choral speaking in the classroom; through using pattern books, chants, rhymes, and songs; and through engaging in meaningful discussions during learning activities.

Teachers should create a pleasant, culturally inclusive classroom in which children who are learning a new language feel not only that they belong, but also that they have a voice that is valued and celebrated.

For further information on supporting English language learners, teachers may consult the ministry's resource document entitled *Many Roots, Many Voices: Supporting English Language Learners in Every Classroom* [2005].

## CHILDREN WITH SPECIAL EDUCATION NEEDS

In any given classroom, children may demonstrate a wide range of learning styles and needs. Teachers plan programs that recognize this diversity, and give children learning experiences that are appropriate for their strengths, needs, and interests so that all children can gain the greatest benefit from the teaching and learning process. Teachers must plan for learning in a diverse, inclusive environment.

Some children may need special programs that are designed expressly for them to help them achieve their maximum potential. Children are eligible to receive special education programs and services upon entry to school in Junior Kindergarten. Children who are formally identified as exceptional through the Identification, Placement, and Review Committee process must have an Individual Education Plan (IEP) developed for them. School boards may also provide a special education program and/or related services for a child who has not been formally identified as exceptional. In such cases, an IEP should be developed for that child.

In planning a Kindergarten program for children with special education needs, teachers should examine the Kindergarten learning expectations and the strengths and needs of the individual child, as determined by educational and other assessments, in order to determine which of the following options is appropriate for the child:

- no accommodations or modifications; or
- accommodations only; or
- modified learning expectations, with the possibility of accommodations.

With the aid of accommodations alone, some children with special education needs are able to participate in the Kindergarten program and to demonstrate learning independently. There are three types of accommodations. *Instructional accommodations* are changes in teaching strategies, including styles of presentation, methods of organization, or use of technology and multimedia. *Environmental accommodations* are changes that the child may require in the classroom and/or school environment. *Assessment accommodations* are changes in assessment procedures that enable the child to demonstrate his or her learning. If a child requires "accommodations only" in the Kindergarten program, assessment and evaluation of his or her achievement will be based on the regular learning expectations for the program.

Some children with special education needs will require modified expectations, which differ from the regular learning expectations of the Kindergarten program. These modified expectations will take into account the strengths and needs of the child. Modifications are changes to the number and/or complexity of the learning expectations for the program. It must be possible to assess and/or evaluate achievement of all modified learning expectations, and all modified learning expectations must describe the specific knowledge and/or skills that the child is expected to demonstrate independently, given the provision of appropriate assessment accommodations. It must be made clear to the child and parents which specific expectations are modified

and what the modifications are. Ways of assessing and/or evaluating a child's learning should be planned for when each modified learning expectation is developed. It must also be made clear which overall expectations will be evaluated. Teachers must review the modified learning expectations at the beginning of each term and update them as necessary. It should be noted that a child with a program based on modified learning expectations may also need specific accommodations for the program.

If a child requires either accommodations or modified learning expectations, or both, the relevant information must be recorded in his or her Individual Education Plan.

For further information, teachers may consult the following resource documents published by the ministry:

- *The Individual Education Plan (IEP): A Resource Guide, 2004*
- *Education for All: The Report of the Expert Panel on Literacy and Numeracy Instruction for Students With Special Education Needs, Kindergarten to Grade 6, 2005*

## ANTIDISCRIMINATION EDUCATION

To ensure that all students in the province have an equal opportunity to achieve their full potential, the education system must be free from discrimination and must provide all students with a safe and secure environment so that they can participate fully and successfully in the educational experience.

The implementation of antidiscrimination principles in education influences all aspects of school life. It promotes a school climate that encourages all students to work to high standards, affirms the worth of all students, and helps students strengthen their sense of identity and develop a positive self-image. It encourages staff and students alike to value and show respect for diversity in the school and the wider society. It requires schools to adopt measures to provide a safe environment. A safe school environment is not only an environment that is free from physical danger and threats, but one that is free from emotional and psychological discomfort, harassment of all types, violence, and bullying. Harassment includes many types of behaviour, such as exclusion, isolation, mockery, name calling, and use of expressions of hate.

### Antidiscrimination and the Kindergarten Program

Given the range of developmental differences displayed by Kindergarten children, it is particularly important that children from various social realities learn that they can succeed in the Kindergarten program. Teachers need to maintain high expectations for all children regardless of their home and community context.

Kindergarten teachers should work to create an inclusive learning environment in which the classroom's physical appearance and the kinds of learning activities chosen for the school year are inclusive in nature and reflect the diversity within the school system and the wider society. The diversity within the Kindergarten classroom could be acknowledged, for example, through the use of dual-language books and charts, as well as pictures of art works from various countries. Children should also be exposed to the diversity of people who are part of Canada and the world, including contemporary Aboriginal peoples.

Learning activities, as well as learning resources and materials used in the Kindergarten program, must be free from bias and stereotyping. They should allow children to make meaningful

connections between what they are learning and their own backgrounds, experiences, and learning styles. Young boys and girls should be encouraged to participate in a broad range of activities, including computer use, construction activities, games, dramatic play, and visual arts and mathematics activities involving manipulatives. Both girls and boys should be encouraged to use all of the musical or rhythm instruments and to use the “messy” learning centres – for example, those involving the use of sand, water, or paint. Attempts should be made to ensure that both boys and girls are spending significant time at all learning centres.

Books should include fairy tales, stories from mythology, and tales from various cultures, as well as stories about children and adults from diverse social, cultural, religious, and family contexts. Characters in stories should be seen performing activities that appeal to both female and male children in non-stereotypical ways, and stories should have diverse male and female heroes. By making use of tapes, older students, and parents or other family members, it is possible to ensure that both males and females read to children. Manuals, magazines, comics, and forms of texts that are of particular interest to young boys should also be available within the classroom and integrated into reading activities.

For further information on supporting the development of boys’ literacy, see the ministry resource document entitled *Me Read? No Way! A Practical Guide to Improving Boys’ Literacy Skills, 2004*.

Fine arts, crafts, music, and dance used in the classroom should be representative of a variety of Canadian and global cultures. Boy and girl dolls and puppets, and both male and female clothing, should be included in the drama centre. For art activities, paper, crayons, and paint should be provided in a range of colours that allow children to represent themselves by using realistic skin colours. Teachers should encourage children to represent themselves or their families “accurately”, but should not insist that they do so. The Kindergarten program should help children develop a sense of what is responsible, fair, and equitable treatment of themselves and others. Children should acquire knowledge and skills related to violence prevention, including skills for handling bullying and simple conflict-resolution skills.

Teachers should also work to ensure that school-community interaction reflects the diversity in the local community and the wider society. Teachers should be aware of various cultural norms in relation to social and personal interaction (e.g., differences in norms for shaking hands or making eye contact). Barriers to participation in such school activities as plays, concerts, and teacher interviews should be taken into consideration when planning these events. For example, if shift work prevents a parent from attending an interview, another family member could be encouraged to attend in his or her place, or the teacher could offer to meet with the parents at another time. Children can also help by encouraging or inviting their families, who may be unfamiliar with the Ontario school system, to participate in school-wide events.

## **THE ROLE OF INFORMATION TECHNOLOGY**

Information and communication technology (ICT) is increasingly important for young learners, and they need opportunities to learn about its present and potential uses. Information technology can be an effective instructional tool to motivate children to explore ideas, concepts, and questions in all areas of the program. Through a variety of multimedia experiences, they can learn to interact with text, visual images, and sounds through listening, speaking, viewing, reading, and writing activities.

Software and computer-based activities should be directly linked to classroom instruction and children's specific strengths and needs. Teachers can use ICT tools and resources that meet the diverse needs of children. Technology can also help promote concept development. The following are examples of how ICT can be used in the Kindergarten classroom to support learning:

- A story can be read aloud by a computer.
- Words can be highlighted electronically as a text is read.
- Children can use software to explore mathematical concepts, such as shapes or patterns.
- Visual and graphic images can be created with the use of digital cameras or computers.
- CDs or DVDs can be used to investigate and research a particular topic of interest.
- Children can “point and click” on objects on the computer screen for further exploration.
- An overhead projector can be used to project letters, words, or shadow puppets.

## **HEALTH AND SAFETY**

To encourage children to make full use of opportunities for inquiry and experimentation, the learning environment needs to be safe, secure, and inviting. Learning centres need to be stocked with materials and resources that are safe – for example, ones that do not have sharp edges or extruding pieces. Art materials need to be non-toxic, and the teacher needs to be aware of any potential danger that could arise from inappropriate use. Children must be aware of any required safety drills and of ways of interacting with each other to ensure that they are not putting themselves or their peers in danger.

# THE LEARNING EXPECTATIONS

This document contains learning expectations outlining knowledge and skills for the following six areas of learning in Kindergarten:

- Personal and Social Development
- Language
- Mathematics
- Science and Technology
- Health and Physical Activity
- The Arts

Skills that are foundational for lifelong learning, well-being, and social development (e.g., self-reliance and social skills) are organized under Personal and Social Development. Skills that are foundational for literacy development (that is, oral communication, reading, writing, and media literacy skills) are organized under Language. Skills that are foundational for numeracy development (e.g., skills in the areas of number sense, geometric relationships, measurement relationships, and pattern) are organized under Mathematics. Skills that are foundational for scientific and technological learning (e.g., inquiry, design, observation, and exploration skills) are organized under Science and Technology. Skills that are foundational for physical development (e.g., skills for large-muscle and small-muscle development) and for healthy living are organized under Health and Physical Activity. Skills that are foundational for learning in the arts (that is, skills in visual arts, music, drama, and dance) are organized under The Arts.

It is important to note that the order in which the expectations are presented in this document does not reflect the sequence in which material should be taught or skills developed.



# PERSONAL AND SOCIAL DEVELOPMENT

## OVERVIEW

The personal and social development of young children lays the social and cognitive groundwork that fosters a love for school, engages the children in the process of learning, and supports future success in school and in life. Kindergarten programs focus on who the children are, and support and encourage them to reach their full potential. In partnership with the home, the school plays a vital role in developing social competence by providing the tools and knowledge that children will need in order to play a constructive role as citizens.

Children enter Kindergarten with a diverse range of needs, experiences, and abilities. The rate at which children adapt to the school environment will vary. Kindergarten teachers, in their relationships with families, play an essential role in facilitating the transition that children face. Teachers and families also collaborate with other significant partners, such as early childhood educators and school and community resource teams, to ensure the best possible transition to the school environment.

The Kindergarten classroom must be an environment where children are affirmed as individuals and as members of a diverse community of learners. The learning and teaching program should provide opportunities for children to discover their strengths, interests, and abilities, put forth their ideas, and develop their relationships with others. Teachers should observe the children in their classrooms in order to plan effectively and should adjust their teaching methods to meet the unique needs of each child. Understanding of the influence of social and cultural contexts on learning enables teachers to recognize and support the children's developing competence and to find a variety of ways in which the children can express their achievements. Teachers should include learning opportunities that reflect the diverse backgrounds of the children (e.g., stories, songs, dance, poetry, and items from their homes and backgrounds).

Expectations for personal and social development are organized under the following subheadings: Self-Awareness and Self-Reliance, Social Relationships, and Awareness of Surroundings. Young children begin their personal and social development by learning about themselves, about themselves in relationship to others, and about themselves in relationship to the world. Social, personal, and emotional growth and learning develop through interactions with others, and are interconnected with other areas of development, such as cognitive and motor skills. For example, a small group of children engaged in sorting math manipulatives must follow a problem-solving process both mathematically and socially. Children learn cognitive, motor, and social skills when they role-play at the dramatic play centre, experimenting with a variety of social roles (e.g., store clerk, bus driver, grandparent). Children learn to persevere and to work independently as they solve puzzles, create sculptures, and construct models.

Teachers nurture children's self-concept, self-reliance, and self-regulation by creating a warm and responsive environment. In this way, they set children up for success. Through a variety of experiences, children begin to see themselves as unique. Children need regular opportunities throughout the Kindergarten day to learn and value the interpersonal skills required in order to communicate and cooperate with others. As they develop self-confidence, they become more receptive to relating to others and take pleasure in learning new skills. As children's self-concept

develops, they demonstrate autonomy in selecting materials, making choices, and setting goals for themselves. Teachers support children's development of social competence and emotional maturity by modelling problem solving and alternative ways to manage conflict and by affirming positive choices. Teachers play an important role in children's lives, since young children who develop a positive self-concept early in life become more successful learners later in life.

## OVERALL EXPECTATIONS

By the end of Kindergarten, children will:

- A. demonstrate a sense of identity and a positive self-image;
- B. demonstrate a beginning understanding of the diversity in individuals, families, schools, and the wider community;
- C. demonstrate independence, self-regulation, and a willingness to take responsibility in learning and other activities;
- D. demonstrate an ability to use problem-solving skills in a variety of social contexts;
- E. identify and use social skills in play and other contexts;
- F. demonstrate an awareness of their surroundings.

## SPECIFIC EXPECTATIONS

### Self-Awareness and Self-Reliance

As children progress through the Kindergarten years, they:

1. recognize personal interests, strengths, and accomplishments **[A]**\*  
*Student Talk:* "I can sing a song in my language." "I can count." "I can write my name." "I did up my own zipper." "I can reach the lights now." "I can play soccer." "I take piano lessons." "I'm a good runner." "I can draw pictures." "I helped my dad set the table."
2. identify and talk about their own interests and preferences **[A]**  
*Student Talk:* "I like dancing at the powwow!" "I like collecting bugs but I don't like spiders." "Gym is fun!"
3. express their thoughts (e.g., on a science discovery, on something they have made)

and share experiences (e.g., experiences at home, cultural experiences) **[A]**

4. develop empathy for others, and acknowledge and respond to each other's feelings (e.g., tell an adult when another child is hurt/sick/upset, role-play emotions with dolls and puppets)  
*Teacher Prompts:* "Why is the main character in the story scared? How would you feel? What do you think he could do to make himself feel better?" **[B]**
5. demonstrate respect and consideration for individual differences and alternative points of view (e.g., help a friend who speaks another language, adapt behaviour to accommodate a classmate's ideas) **[B]**
6. talk about events or retell stories that reflect their own heritage and cultural background and the heritage and cultural backgrounds of others (e.g., traditions, birthdays, cultural events, myths, Canadian symbols, holidays) **[B]**

\* The letters in boldface type that follow each specific expectation indicate the overall expectation to which the specific expectation is linked.

7. demonstrate self-reliance and a sense of responsibility (e.g., *separate willingly from parents when they arrive at school, dress themselves at school, make choices and decisions on their own, take care of personal belongings, know when to seek assistance, know how to get materials they need*) [C]
8. demonstrate a willingness to try new activities (e.g., *experiment with new materials/tools, try out activities in a different learning centre, join in the singing of a song, select and persist with challenging activities, experiment with writing*) [C]
9. begin to demonstrate self-control (e.g., *be aware of and label their own emotions, accept help to calm down, calm themselves down after being upset*) and adapt behaviour to different contexts within the school environment (e.g., *follow routines and rules in the classroom, gym, library, playground*) [C]
10. demonstrate self-motivation, initiative, and confidence in their approach to learning by selecting and completing learning tasks (e.g., *choose learning centres independently, try something new, persevere with tasks*) [C]
11. interact cooperatively with others in classroom events and activities (e.g., *offer and accept help in group situations, join in small- and large-group games and activities, join in democratic decision making*) [C]
12. adapt to new situations (e.g., *having visitors in the classroom, having a different teacher occasionally, going on a field trip, riding the school bus; initially: adapt with a great deal of support from the teachers; eventually: adapt with less assistance*) [C]

### Social Relationships

As children progress through the Kindergarten years, they:

13. use a variety of simple strategies to solve social problems (e.g., *seek assistance from the teacher when needed, use pictures and/or words to express their feelings, develop an awareness of honesty, talk to peers about possible solutions*) [D]
  14. act and talk with peers and adults by expressing and accepting positive messages (e.g., *use an appropriate tone of voice and gestures, give compliments, give and accept constructive criticism, use "I" messages*) [E]
- Student Talk:** "Fatima helped me pick up the blocks." "I didn't like it when you took my book." "That's a good painting."
15. demonstrate the ability to take turns in activities and discussions (e.g., *engage in play activities with others, listen to peers and adults*) [E]
- Student Talk:** "You can be the firefighter this time."
16. demonstrate an awareness of ways of making and keeping friends (e.g., *sharing, listening, talking, helping; entering into play or joining a group with guidance from the teacher*) [E]
- Student Talk:** "I like what you're building, can I help?" "Do you want to look at this book with me?" "Let's put on a puppet show." "Do you want to be the waiter? I'd like to order a pizza, please."

### Awareness of Surroundings

As children progress through the Kindergarten years, they:

17. identify people who work in the community, and talk about what they do (e.g., *farmer, park ranger, police officer, nurse, Aboriginal healer, store clerk, engineer, baker*) [F]
18. recognize special places and buildings within their community, both natural and human-made, and talk about their functions (e.g., *farm, church, hospital, mosque, sweat lodge, arena, mine, cave*) [F]
19. develop an awareness of ways in which people adapt to the places in which they live (e.g., *children in cities may live in high-rise buildings and use sidewalks and the subway; children in the country may take the bus to school*) [F]
20. demonstrate an awareness of different kinds of weather and ways in which people adapt to the weather (e.g., *wearing sunscreen, wearing hats and boots, using an umbrella, flying kites, taking part in winter and summer sports*) [F]

# LANGUAGE

## OVERVIEW

### Using Children’s Prior Knowledge and Experience

Before going to school, children have already had a wide range of lived experiences with spoken, written, and visual communication, and have used language in familiar contexts. They have also developed ways of using language that are specific to their cultural and linguistic contexts. By building on the language development and the understandings that children bring to school, teachers can provide children with the learning experiences they need, as well as support and guidance in their learning. By encouraging children to develop competence in language use, teachers can also help children learn about the role and power of language in their own lives and in their own and other cultures.

Teachers plan programs that allow children to explore language and to communicate their thinking and learning in meaningful ways to both the teacher and their peers. Teachers make decisions about the use of materials and the focus of their teaching that are based both on the learning expectations and on their observations of the children’s needs, and they create an environment that supports language learning and literacy in many ways. For example, they provide rich and varied materials and hands-on experiences to encourage talking, reading, writing, and viewing media texts, and they organize the classroom to promote discussion. They also motivate children to attempt new things – such as writing using approximate spellings – and they show that they value these attempts. Teachers use ongoing assessment to determine children’s learning strengths and needs in literacy in an intentional way throughout the day. They continually help children to clarify what they already know, and they organize learning experiences and provide support to enable children to build on previous knowledge in small steps and gradually gain independence.

### Building on Oral Language

Although children develop skills in reading, writing, and oral language (listening and speaking) from an early age, *oral language must be the foundation of literacy development in Kindergarten*. Through experience with oral language, children develop the ability to identify and manipulate phonemes (phonemic awareness), build vocabulary, develop awareness of meaning (semantic knowledge), and develop awareness of language structure (syntactic knowledge), and thus develop the foundations for reading and writing. Proficiency in oral language is critical to the success of literacy development. Teachers can guide oral language development by listening attentively to and observing children’s responses and interactions, by providing models of richer responses to guide children’s thinking, and by introducing new vocabulary. Although oral language is the focus of early language learning, reading and writing need to be taught and developed at the same time, so that children can make connections between what they hear, say, read, and write. Listening, speaking, reading, and writing are all interrelated, and development in one area supports development in all the others.<sup>1</sup>

1. Adapted from: *Early Reading Strategy: The Report of the Expert Panel on Early Reading in Ontario* (Toronto: Ministry of Education, Ontario, 2003), p. 14.

## Using the Expectations

The curriculum expectations for language are arranged under the following subheadings: Oral Communication, Reading, Writing, and Understanding of Media Materials. They are, of course, aspects of an integrated learning process, and are applicable in all areas of learning. For example, a child engaged in a planting/growing activity at the science centre might be: developing the ability to listen to, follow, and retell simple instructions (oral communication); listening for a specific purpose in a “read-aloud” about caring for plants (reading); recording observations of the plant’s growth over time, using pictures and/or words (writing); and viewing and discussing a DVD or video about protecting plants in the environment (media literacy).

The expectations are best addressed in ways that are meaningful and relevant for young children and that build on their prior knowledge and experience. In such activities, children can be encouraged to think critically – for example, to look at things from a different point of view or to connect what they are learning to an experience they have had or to information in another text they know. They can also be encouraged to think creatively – for example, to use what they already know in a different context, to respond through drawing or painting or through movement, or to explore a new idea.

## Using Assessment in Planning Instruction

In order to support children’s individual progress, teachers should plan a variety of learning experiences, including intentional instruction. On the basis of information gathered from ongoing assessment, teachers should make decisions about the kinds of support, instruction, and materials they need to provide. Children will be involved in small-group, whole-class, and individual learning experiences that address their needs and interests and that are within the range of things they can do with and without guidance (in their zone of proximal development). The length of time and the purpose of these groupings will vary, depending on the length of time that the children have been in school, the age and needs of the children, and the focus of instruction. *Children develop knowledge and skills in the various areas of language learning at different rates and in different ways.* As teachers plan activities to meet children’s individual needs, they may ask such questions as the following: What can this child do? What does this child know? What does this child need to learn next and what will support his or her learning in order to meet the overall expectations?

## Planning Experiences in Language Learning

Planning for language instruction should include consideration of a wide variety of learning experiences that develop foundational literacy skills. These experiences should encourage children to engage in free exploration, independent discovery, and independent application of what they have learned. Skilful teachers plan purposeful literacy instruction as part of a comprehensive literacy program, including the use of instructional strategies for modelled, shared, guided, and independent literacy learning activities. To support children’s progress as language users and learners, teachers may provide a variety of levels of support to help the children learn the skills and strategies outlined in the specific expectations. For example, teachers may plan to focus on a reading strategy, such as making connections. They may model the use of the strategy first by telling the children what a text reminds them of during a read-aloud. They then may encourage the children to do the same to help them make their own connections during other read-alouds or during shared reading of different texts. Teachers may also encourage children to make connections independently between various

texts if the children seem ready to do so. For example, children could discuss their responses to books that they have selected for independent reading with a small group of classmates in a shared reading activity with the teacher.

### **Building a Community of Literacy Learners**

It is important that young children see themselves as individuals who talk, listen, read, write, and view media texts in order to make sense of their world. Children need time to explore, to reflect, and to make connections between what they know and what they see and read. Children will use language in all areas of learning as they participate in planned activities at various learning centres, communicating their thoughts, posing questions, and investigating ideas. By using literacy materials in the learning centres, children learn to see reading and writing as integral aspects of their daily lives. For example, children could examine books about fire trucks at the block centre as they make a fire station; they could use writing materials to make signs or maps for their roads at the sand table; or they could look at and discuss menus as they learn about ordering foods in restaurants at the dramatic play centre. Children could also learn about the central place of oral language, reading, and writing in their daily classroom routines – for example, by using visuals as they describe the order of events of the day; by using words and pictures to explain the routine for the painting centre; or by reading pictures and labels on materials to find out what they contain or where they should be put away. Development of a positive attitude towards language learning and enthusiasm for using language in all its forms will have a significant impact on children’s future success.

For further information on teaching approaches for oral language, reading, and writing, including planning for development of literacy in learning centres, teachers may wish to consult the following resource documents published by the ministry:

- *A Guide to Effective Instruction in Reading, Kindergarten to Grade 3, 2003* (oral language and reading)
- *A Guide to Effective Instruction in Writing, Kindergarten to Grade 3, 2005*

### **OVERALL EXPECTATIONS**

By the end of Kindergarten, children will:

- A. communicate by talking and by listening and speaking to others for a variety of purposes and in a variety of contexts;
- B. demonstrate understanding and critical awareness of a variety of written materials that are read by and with the teacher;
- C. use reading strategies that are appropriate for beginning readers in order to make sense of a variety of written materials;
- D. communicate in writing, using strategies that are appropriate for beginners;
- E. demonstrate a beginning understanding and critical awareness of media texts.

## SPECIFIC EXPECTATIONS

## Oral Communication

As children progress through the Kindergarten years, they:

1. explore sounds, rhythms, and language structures with guidance and on their own (e.g., generate rhymes, including nonsense words; identify syllables through actions, such as clapping; manipulate sounds and words in shared, guided, and independent activities, such as singing songs or chants or participating in finger plays) [A]\*
2. listen and respond to others for a variety of purposes (e.g., to exchange ideas, express feelings, offer opinions) and in a variety of contexts (e.g., after read-alouds and shared reading or writing activities; while solving a class math problem; in imaginary or exploratory play; at the learning centres; while engaged in games and outdoor play; while making scientific observations of creatures outdoors) [A]  
*Student Talk: Initially* (when taking on the role of parent at the house centre) "The baby is crying." *Eventually* "Don't cry, I'll change your diaper for you." "I'm making a house. What are you making? I think you should paint yours blue."
3. follow one- and two-step directions in different contexts (e.g., in classroom routines; music, drama, and dance activities; outdoor play; learning centres; large-group activities) [A]
4. use language in various contexts to connect new experiences with what they already know (e.g., contribute ideas orally during shared or interactive writing; contribute to conversations at learning centres; respond to teacher prompts) [A]  
*Student Talk:* "I made a sandcastle like this at the beach." "I built a snowman with my brother like the one in the story."
5. use language to talk about their thinking, to reflect, and to solve problems [A]  
*Teacher Prompts:* "I wonder how you knew that." "How did you figure that out?" "What were you thinking about?"

6. use specialized vocabulary for a variety of purposes (e.g., terms for things they are building or equipment they are using) [A]

*Student Talk:* At the block centre: "We put a roof on our house." At the water centre: "I poured the water in the funnel." After listening to a book being read about farming and then creating a farm with blocks: "My silo doesn't have any grain in it yet."

7. ask questions for a variety of purposes (e.g., for direction, for assistance, for obtaining information, for clarification, for help in understanding something) and in different contexts (e.g., during discussions and conversations with peers and adults; before, during, and after read-aloud activities and shared reading; while making observations on a class walk; in small groups at learning centres) [A]
8. begin to use and interpret gestures, tone of voice, and other non-verbal means to communicate and respond (e.g., respond to non-verbal directions from the teacher; vary tone of voice when dramatizing; name feelings that are expressed in facial expressions in photos or illustrations; recognize when someone is upset) [A]
9. describe personal experiences, using vocabulary and details appropriate to the situation [A]  
*Student Talk: Initially* "We went out for supper." "My dad and I went out for supper." *Eventually* "Last night I went out for supper with my dad because Oma was busy."
10. orally retell simple events and simple familiar stories in proper sequence [A]

*Student Talk: Initially* "We cooked the apples." *Eventually* "First we had to peel all of the apples. Then we cut them up and cooked them. Then we mashed them and ate the apple sauce." *Initially* "Humpty Dumpty fell down and couldn't get up." *Eventually* "Humpty Dumpty was sitting on a wall and he fell down. The king and his men tried to help him but he was too broken and they couldn't fix him. The end."

\* The letters in boldface type that follow each specific expectation indicate the overall expectation(s) to which the specific expectation is linked.

11. demonstrate awareness that words can rhyme, can begin or end with the same sound, and are composed of phonemes that can be manipulated to create new words (e.g., *identify or predict rhyming words; clap syllables in words; replace or delete the initial sounds in a word in songs, poems, chants, name games*) [A, C]

## Reading

As children progress through the Kindergarten years, they:

12. demonstrate an interest in reading (e.g., *expect to find meaning in pictures and text, choose to look at reading materials, respond to texts read by the teacher, reread familiar text, confidently make attempts at reading*) [B, C]
13. identify personal preferences in reading materials (e.g., *choose fiction and non-fiction books, magazines, posters, computerized interactive texts that they enjoy*) in different contexts (e.g., *teacher read-alouds, shared experiences in reading books, independent reading time*) [B, C]
- Student Talk:** “I like the bug books because I really like spiders.” “Read the book about Thomas again! It was funny.” “I’m making a maze. I read books with mazes all the time.”
14. respond to a variety of materials read aloud to them (e.g., *participate in oral discussions after reading; ask questions to clarify understanding; dramatize familiar stories at the retelling or drama centre; paint, draw, or construct models of characters or settings*) [B, C]
- Teacher Prompts:** After reading a book about a forest: “How do you think the author feels about forests? How do you think the author wants *us* to feel about forests? Why do you think there are photographs instead of illustrations in the book?” After reading a book about a social issue relevant to the class: “Who is this book written for? What would this story be about from another point of view?”
15. use illustrations to support comprehension of texts that are read by and with the teacher (e.g., *initially: use the information in the pictures in a storybook as they tell the story; eventually: use pictures to support predictions and to confirm the meaning of a word*) [B, C]
16. use prior knowledge to make connections (e.g., *to new experiences, to other books, to events in the world*) to help them understand a diverse range of materials read by and with the teacher [B, C]
- Student Talk:** “I live in an apartment, too.” “That’s just like the other book we read.” “My grandpa and I collected rocks and we made an Inukshuk like the one on the postcard.” “That book is just like a movie I saw.”
17. make predictions regarding an unfamiliar text that is read by and with the teacher, using prior experience, knowledge of familiar texts, and general knowledge of the world around them (e.g., *use the cover pictures and/or title to determine the topic and/or text form*) [B, C]
- Teacher Prompts:** “What do you think this book might be about? How did you figure that out?” “What kind of book do you think this is? What does the picture tell us about what might happen in the book? What clues did you use to help you figure that out?” “What words do you think might be in this book?” “What do you know about birds that will help us read this book?”
18. retell stories in proper sequence that have been read by and with the teacher, using pictures in the book and/or props (e.g., *use props such as finger puppets or flannel-board characters; use plastic models at the sand table to tell the story of the Gingerbread Man*) [B, C]
19. retell information from non-fiction materials that have been read by and with the teacher in a variety of contexts (e.g., *read-alouds, shared reading experiences*), using pictures and/or props [B, C]



**Student Talk:** *Initially* “First he was a caterpillar, then he was a butterfly.”  
*Eventually* “First the butterfly is an egg, then it turns into a caterpillar, the caterpillar spins a chrysalis, and then it’s a beautiful butterfly.”

20. demonstrate an awareness of basic book conventions and concepts of print when a text is read aloud or when they are beginning to read print (e.g., *hold the book the right way up; start at the beginning of the book; turn the pages in the correct order; recognize that print uses letters, words, spaces between words, and sentences; understand that printed materials contain messages; follow the print with a pointer for the class as a story is read aloud during shared reading*) [B, C]

21. demonstrate knowledge of most letters of the alphabet in different contexts (e.g., *use a variety of capital and lower-case manipulative letters in letter play; identify letters by name on signs and labels at learning centres, in chart stories, in poems, in big books, on traffic signs; identify the sound that is represented by a letter; identify a word that begins with the letter*) [B, C]

**Student Talk:** “It’s a capital T.” “That’s m.” “That word starts like my name – Jasdeep.”

22. begin to use reading strategies to make sense of unfamiliar texts in print (e.g., *use pictures; use knowledge of oral language structures, of a few high-frequency words, and/or of sound-symbol relationships; initially: tell a story using the pictures, recognize some familiar names or words; eventually: read patterned and simple texts*) [C]

**Teacher Prompts:** “Let’s do a picture walk of the book.” “I noticed that you looked at the picture before you tried that word.” “If you think the word is *jump*, then what letter will we see when we lift the sticky note?”

## Writing

As children progress through the Kindergarten years, they:

23. demonstrate interest in writing (e.g., *choose a variety of writing materials, such as adhesive notes, labels, envelopes, coloured paper, markers, crayons, pencils*) and choose to write in a variety of contexts (e.g., *draw or record ideas at learning centres*) [D]

24. demonstrate an awareness that writing can convey ideas or messages (e.g., *contribute ideas to modelled, shared, or interactive writing experiences; ask the teacher to write out new words for them; ask questions about the meaning of something in print*) [D]

**Student Talk:** “What does that say?”  
 “What does it mean?”

25. write simple messages (e.g., *a grocery list on unlined paper; a greeting card made on a computer; labels for a block or sand construction*), using a combination of pictures, symbols, knowledge of the correspondence between letters and sounds (phonics), and familiar words (e.g., *initially: use pictures and strings of random letters; eventually: use such familiar words as I, to, and my, and such spelling approximations as “I lv u mum” or “dnt tuch”*) [D]

**Teacher Prompts:** “Stretch the word and listen to the sounds.” “What sound do you hear at the beginning (middle, end) of that word?” “Whose name starts with that sound?”

26. begin to use classroom resources to support their writing (e.g., *a classroom word wall that is made up of children’s names, words from simple patterned texts, and words used repeatedly in shared or interactive writing experiences; signs or charts in the classroom; picture dictionaries; alphabet cards; books*) [B, D]

2. Examples of patterned and simple texts are: **Reading Recovery:** patterned text, levels 2, 3; simple text, levels 3, 4, 5, 6; **Fountas and Pinnell:** patterned text, levels B, C; simple text, levels C, D; **PM Benchmark:** patterned text, levels 2, 3; simple text, levels 3, 4, 5, 6; **DRA:** patterned text, levels 2, 3; simple text, level 4; **Alphakids:** patterned text, levels 2, 3; simple text, levels 3, 4, 5, 6.

27. experiment with a variety of simple writing forms for different purposes and in a variety of contexts (e.g., *write letters at the post office centre; make signs at the block centre; record their findings at the water centre or dramatic play centre; make a list of classmates' names; make greeting cards at the visual arts centre; tell stories at the writing centre or painting centre*) [D]
28. communicate ideas about personal experiences and/or familiar stories, and experiment with personal voice in their writing (e.g., *make a drawing of a day at the park and retell their experiences orally to their classmates; make a story map of "The Three Little Pigs" and retell the story individually to the teacher during a writing conference*) [D]

### Understanding of Media Materials

As children progress through the Kindergarten years, they:

29. begin to respond critically to animated works (e.g., *cartoons in which animals talk, movies in which animals go to school*) [E]
- Teacher Prompts:* "Whom do you think the people who created this cartoon made it for?" "Who do you think likes to watch cartoons or animated works?" "What is it about this cartoon that makes you want to watch it?"
30. communicate their ideas verbally and non-verbally about a variety of media materials (e.g., *describe their feelings in response to seeing a DVD or a video; dramatize messages from a safety video or poster; paint pictures in response to an advertisement or CD*) [E]
- Teacher Prompt:* "How was Yen's thinking about the DVD/video different from yours?"
31. view and listen to a variety of media materials (e.g., *videos, photographs, posters, menus, advertisements*), and respond critically to them [E]
- Teacher Prompts:* "Someone made this poster. Whom do you think he or she wanted to look at it? Why?" "Sometimes when you buy cereal, there are toys in the box. Why do you think the people who made the cereal put toys in there?"

# MATHEMATICS

## OVERVIEW

### Building on Prior Knowledge and Experience

Mathematics in Kindergarten builds on children’s desire to make sense of their world, and helps them develop and demonstrate their mathematical understanding. Young children use mathematics intuitively and develop their understanding of mathematics through their individual approaches to learning, as well as through their prior experience of their linguistic, family, cultural, and community backgrounds. It is therefore important that children’s existing conceptual understanding of mathematics be valued and that children be introduced to mathematical concepts in an appropriate manner and at an appropriate time in their development. Children also need to be given learning experiences that are within the range of things they can do with and without guidance (that is, in their zone of proximal development).<sup>1</sup>

### Providing Rich Problems and Connections to Real Life

Problem solving and reasoning that involve the “big ideas”<sup>2</sup> of mathematics are the foundations of mathematics in the Kindergarten program. Rich mathematical problems involve important mathematical ideas and arise out of real-life situations, and can be approached in a variety of ways so that all children can be involved in exploring solutions. Solving such mathematical problems requires persistence, since they do not have one easy-to-find correct answer. Through active participation in mathematics investigations, including problem solving and discussions, children develop their ability to use mathematics as a way of making sense out of their daily experiences.

### Providing Balanced Mathematics Instruction

The expectations for mathematics are organized under the following subheadings:

- Number Sense and Numeration (Quantity Relationships; Counting; Operational Sense)
- Measurement (Attributes, Units, and Measurement Sense; Measurement Relationships)
- Geometry and Spatial Sense (Geometric Properties; Geometric Relationships; Location and Movement)
- Patterning (Patterns and Relationships)
- Data Management and Probability (Collection and Organization of Data; Data Relationships; Probability)

To ensure continuity with the mathematics curriculum for Grades 1 to 8, the above headings are largely the same as the strand titles in *The Ontario Curriculum, Grades 1–8: Mathematics, 2005*. The text in parentheses is also largely the same as the headings for the subgroupings of the specific expectations for Grades 1 to 8. (The only differences are in Patterning.)

In addition to the expectations in each of these categories, a list of seven “mathematical processes” is provided. These processes, which are also the same as the processes given in the curriculum policy document for Grades 1 to 8, are essential to the effective study of mathematics. Children need to learn and apply them in every aspect of their exploration of mathematical

1. Adapted from: *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario* (Toronto: Ministry of Education, Ontario, 2003), pp. 7–9.

2. Further information on the “big ideas” can be found in the introductory sections of: Ministry of Education, Ontario, *A Guide to Effective Instruction in Mathematics, Kindergarten to Grade 3: Number Sense and Numeration, 2003*, and *Geometry and Spatial Sense, 2005*.

concepts. When developing their Kindergarten mathematics program from this document, teachers are expected to weave together the mathematical processes and related expectations from the five mathematics categories, as well as relevant expectations from other areas of learning (e.g., science and technology, language, the arts). It is important that the study of various aspects of everyday life should permeate young children’s mathematical experiences.

In several expectations in Number Sense and Numeration, key concepts of counting<sup>3</sup> are introduced either as the focus for the expectation (“movement is magnitude” [quantity], “one-to-one correspondence”, “stable order”, and “order irrelevance”) or in examples (“conservation”, “cardinality”, and “abstraction”). The key concepts of counting are interrelated, and are not necessarily developed in a linear fashion – for example, a child might learn some aspects of one concept, move on to another concept, and then return to work on other aspects of the first concept. Children demonstrate their understanding of these counting concepts in all five areas of mathematics – for example, a child might demonstrate his or her understanding of one-to-one correspondence while analysing data on a graph made by the class.

On the basis of what we know about young children’s learning, mathematics in Kindergarten must be active, hands-on, child-centred, and problem-based. Concrete materials provide children with tactile experiences to help them explore and describe mathematical problems and solutions. Questioning is a very important aspect of mathematics in the Kindergarten program. Teachers should provide models of a range of question types to promote problem solving and to probe and challenge children’s mathematical thinking and reasoning. Teachers should also create an environment in which children are encouraged to pose mathematical questions, explore, and investigate. It is important that good questioning be interwoven throughout the Kindergarten program and that children’s literature, music, or art work be used as starting points for mathematics activities.<sup>4</sup> Reading books aloud and in shared reading contexts provides real links between literature and mathematical ideas, since some stories use mathematical terminology and/or contain illustrations of mathematical concepts. Reading can also give children a sense of how mathematics is connected with other aspects of life, such as science and the arts. Children should therefore be given many opportunities to demonstrate their understanding in a variety of ways – for example, by constructing concrete models, by describing their understanding in their first language, and/or by making drawings to illustrate a mathematical concept.

Teachers should provide children with planned opportunities every day to develop their mathematical understanding by incorporating high-quality investigative learning experiences that involve the use of mathematics manipulatives. Teachers can introduce mathematical concepts, strategies, and vocabulary in carefully planned hands-on activities at various learning centres in the classroom, and can provide children with opportunities to explore mathematical concepts and strategies in a wide variety of ways. Opportunities can be found daily to encourage children to reflect on and extend their understanding of mathematics as it occurs in their everyday activities, play, and conversations. Children should also be provided with ready access to a wide range of other concrete materials, such as found objects, commercial products, tools, and equipment, so that they can develop a beginning understanding of how to use various materials to explore mathematical concepts.

3. Key concepts are described in *A Guide to Effective Instruction in Mathematics, Kindergarten to Grade 3: Number Sense and Numeration*, pp. 7–8.

4. Adapted from: *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario*, p. 24.

It is important for young children to see themselves as mathematicians as they investigate their world. Children need time to practise and consolidate their learning through mathematical investigations that take place through free exploration, focused exploration, and guided activity. They also need time to reflect and to make connections. Developing a positive attitude to mathematics and the ability to persevere in solving problems will have a significant impact on children’s future success.

For further information on early mathematics instruction, teachers may wish to consult the following resource documents published by the ministry:

- *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario, 2003*
- *A Guide to Effective Instruction in Mathematics, Kindergarten to Grade 3, 2004*
- *A Guide to Effective Instruction in Mathematics, Kindergarten to Grade 3: Number Sense and Numeration, 2003*
- *A Guide to Effective Instruction in Mathematics, Kindergarten to Grade 3: Geometry and Spatial Sense, 2005*
- *Helping Your Child Learn About Math, 2003*

## THE MATHEMATICAL PROCESSES FOR EARLY LEARNERS

Seven mathematical processes are provided below, and are to be integrated into children’s learning associated with all of the Kindergarten mathematics expectations. The need to highlight these processes arose from the recognition that children should be actively engaged in applying them *throughout* the mathematics program, rather than only in connection with particular groups of expectations (e.g., expectations for number sense and numeration, measurement, or geometry and spatial sense).

The mathematical processes that support effective learning in mathematics are as follows:

- problem solving
- reasoning and proving
- reflecting
- selecting tools and strategies
- connecting
- representing
- communicating

These mathematical processes can be seen as the processes through which children acquire and apply mathematical knowledge and skills. These processes are interconnected. Also, problem solving and communicating have strong links to all the other processes. A problem-solving approach encourages children to reason their way to a solution or a new understanding. The communication and reflection that occur during and after the process of problem solving help children see the problem they are solving from different perspectives. Knowledge gained from engagement in all of these processes helps children begin to recognize the range of strategies that can be used to arrive at a solution. By seeing how others solve a problem, children can begin to reflect on their own thinking (a process known as “metacognition”) and the thinking of others.

Mathematical Processes	Suggestions for Teachers
<p><b>Problem Solving</b> Children begin to develop and apply problem-solving strategies, and persevere when solving problems and conducting mathematical investigations.</p>	<p>Teachers can provide models for problem solving. As children investigate possible solutions, they begin to develop an understanding that there is often more than one way to solve a problem and that problems can be solved in collaboration with others. Teachers provide opportunities for children to highlight and describe the various ways they solved the problem.</p>
<p><b>Reasoning and Proving</b> Children apply developing reasoning skills (e.g., pattern recognition, classification) to create and investigate possibilities (e.g., through talk and through models provided by the teacher and sometimes by other children).</p>	<p>Teachers can observe each child's own mathematical strategies, and pose questions that reveal the child's thinking (e.g., "How did you decide to . . . ?" "How did you know what came next in the pattern?" "What do you think will happen? How can you show me?" "Does anyone else have an idea?"). Teachers use their observations to plan and adapt instruction.</p>
<p><b>Reflecting</b> Children demonstrate that they are reflecting on and monitoring their thinking to help clarify their understanding as they complete an investigation or solve a problem (e.g., explain to others how they solved their problem).</p>	<p>Teachers provide models of reflective statements and questions to help the children deepen their understanding (e.g., "How many different ways did we . . . ?" "How many more do you think we need now?" "You have a good start with this pattern. Is there another way you could . . . ?" "Would looking at Nancy's pattern help?" "What could you do . . . ?").</p>
<p><b>Selecting Tools and Strategies</b> Children select and use a variety of concrete, visual, and electronic learning tools and appropriate strategies to investigate mathematical ideas and to solve problems.</p>	<p>Teachers observe how children select and use materials so that they can plan and adapt instruction. Teachers provide the children with models of different ways to use a variety of tools and strategies (e.g., strategies for counting). Teachers provide children with opportunities to share the different ways they use tools and strategies.</p>
<p><b>Connecting</b> Children begin to make connections among mathematical concepts and notice examples of mathematics in their everyday life.</p>	<p>The mathematical experiences for young children build largely upon the natural relationships between play and learning in their daily activities, questions, and interests. Teachers facilitate mathematical thinking in various ways (e.g., <i>at the dramatic play centre</i>: "How many people will be at your lunch? How many plates will you need?"; <i>at the block centre</i>: "How is your building big – is it tall or is it wide?"; <i>during time with the whole class</i>: "We are going to make a class book about all the places where we use numbers.").</p>
<p><b>Representing</b> Children create basic representations of simple mathematical ideas (e.g., use concrete materials; physical actions, such as hopping or clapping; pictures; numbers; diagrams; dramatization; invented symbols), make connections among them, and apply them to solve problems.</p>	<p>Teachers make explicit to children that there are many ways to represent mathematical ideas in order to help the children develop flexibility in thinking about ways of representing ideas. Teachers can do that by providing models, thinking aloud (e.g., "I can't draw this many people. How else could we keep track of them?"), and describing children's representations (e.g., "You used 2 cubes on this plate and 3 cubes on that plate to make 5 cubes.").</p>
<p><b>Communicating</b> Children communicate mathematical thinking orally and visually, using everyday language, an emerging mathematical vocabulary, and a variety of representations (e.g., constructions, pictures, dramatizations).</p>	<p>Teachers provide models for using mathematical language, questioning, extending thinking, clarifying processes, and building vocabulary (e.g., "How did you know that this plate has more carrots?" "Can you show me how you figured that out?" "How can you prove that?" "What shapes did you use to paint your picture?").</p>

## OVERALL EXPECTATIONS

By the end of Kindergarten, children will:

- A. demonstrate an understanding of number, using concrete materials to explore and investigate counting, quantity, and number relationships;
- B. measure and compare length, mass, capacity, area, temperature of objects/materials, and the passage of time, using non-standard units, through free exploration, focused exploration, and guided activity;
- C. describe, sort, classify, and compare two-dimensional shapes and three-dimensional figures, and describe the location and movement of objects through investigation;
- D. explore, recognize, describe, and create patterns, using a variety of materials in different contexts;
- E. sort, classify, and display a variety of concrete objects, collect data, begin to read and describe displays of data, and begin to explore the concept of probability in everyday contexts.

## SPECIFIC EXPECTATIONS

### Number Sense and Numeration (Quantity Relationships; Counting; Operational Sense)

As children progress through the Kindergarten years, they:

1. investigate the idea that quantity is greater when counting forwards and less when counting backwards (e.g., use manipulatives to create a quantity number line; move along a number line; move around on a hundreds carpet; play simple games on number-line game boards; build a structure using blocks, and describe what happens as blocks are added or removed) **[A]\***

**Student Talk:** *Initially* “This is getting bigger.” “Every time I add a block, my building gets taller.” *Eventually* “We need three more blocks to finish the base.”

2. investigate some concepts of quantity through identifying and comparing sets with more, fewer, or the same number of objects (e.g., find out which of two cups contains more or fewer beans, using counters; investigate the ideas of more, less, and the same, using five and ten frames; compare two sets of objects that have the same number of items, one set having the items spread out, and recognize that both sets have the same quantity

[concept of conservation]; recognize that the last count represents the actual number of objects in the set [concept of cardinality]; compare five beans with five blocks, and recognize that the number 5 represents the same quantity regardless of the different materials [concept of abstraction] **[A]**

**Student Talk:** “Let’s count the cars. I have six and you have five. That means I have one more. Let’s get another one so we can have the same.” “You counted 35 buttons. I go even higher. I can count 40 buttons.”

**Sample Problems:** “Let’s find out how many marbles I can hold in my hand. How many do you think? Let’s count and see. How many marbles can you hold in your hand? Let’s count. Do you have more or less than me?”

3. recognize some quantities without having to count, using a variety of tools (e.g., dominoes, dot plates, dice, number of fingers) or strategies (e.g., composing and decomposing numbers, subitizing) **[A]**

**Teacher Prompts:** “How did you know it was five? How did you figure out how many?”

**Student Responses:** “I know it’s five because it looks like the dice in my game.” “It’s five. I saw four red and one blue.”

\* The letters in boldface type that follow each specific expectation indicate the overall expectation(s) to which the specific expectation is linked.

4. begin to use information to estimate the number in a small set (e.g., *apply knowledge of quantity, use a common referent such as a five frame*) [A]

**Student Talk: Initially** “I think it will take three scoops to fill up the pail. ...It took six.” **Eventually** “I know that is not 100. A hundred is a lot and this is only a little bit.” “I think there are more than five buttons because they wouldn’t all fit on a five frame.”

5. use, read, and represent whole numbers to 10 in a variety of meaningful contexts (e.g., *use a hundreds chart; use magnetic and sandpaper numerals; put the house number on a house built at the block centre; find and recognize numbers in the environment; use magnetic numerals to represent the number of objects in a set; write numerals on imaginary bills at the restaurant at the dramatic play centre*) [A]

**Student Talk: Initially** “I’m five years old.” **Eventually** (pointing to numbers in a book and reading them aloud to a classmate) “Five. There are five frogs on the log.”

6. use ordinal numbers in a variety of everyday contexts (e.g., *line up toys and manipulatives, and identify the first, second, and so on; after reading a book, respond to the teacher’s questions about who was the first or third person to come in the door; identify the first, seventh, or tenth person to arrive at school or in the group*) [A]

7. demonstrate an understanding of number relationships for numbers from 0 to 10, through investigation (e.g., *initially: show smaller quantities using anchors of five and ten, such as their fingers or manipulatives; eventually: show quantities to 10, using such tools as five and ten frames and manipulatives*) [A]

**Student Talk:** “I know there are seven counters because all of the ten frame is full except for three spaces.” “I know there are seven counters because all of the five frame is full and there are two left over.”

**Teacher Prompts:** “Show me 3 on a five frame.” “How do you know that it is 3?” “What comes in 5’s [e.g., fingers, toes]?”

8. investigate and develop strategies for composing and decomposing quantities to 10 (e.g., *use manipulatives or “shake and spill” activities; initially: to represent the quantity of 8, the child may first count from 1 through to 8 using his or her fingers; later, the child may put up one hand, count from 1 to 5 using each finger, pause, and then continue to count to 8 using three more fingers; eventually: the child may put up all five fingers of one hand at once and simply say “Five”, then count on, using three more fingers and saying “Six, seven, eight. There are eight.”*) [A]

**Student Talk:** “I only have three wheels for my car. I need one more to make four.” “There are five people at the snow table but we only have three shovels. We need two more shovels.”

9. explore different Canadian coins, using coin manipulatives (e.g., *role-play the purchasing of items at the store at the dramatic play centre; determine which coin will purchase more – a loonie or a quarter*) [A]

10. demonstrate understanding of the counting concepts of stable order (that is, the concept that the counting sequence is always the same – 1 is always followed by 2, 2 by 3, and so on) and of order irrelevance (that is, the concept that the number of objects in a set will be the same regardless of which object is used to begin the counting) [A]

11. begin to make use of one-to-one correspondence in counting objects and matching groups of objects (e.g., *one napkin for each of the people at the table*) [A]

**Sample Problems:** “I am meeting with three children. I wonder how many chairs I will need.” “Show me how you know you need six cages for your lions.”

**Student Talk:** “I counted five children. I need five pieces of apple, one for each child.”

12. investigate addition and subtraction in everyday activities through the use of manipulatives (e.g., *interlocking cubes, visual models (e.g., a number line, tally marks, a hundreds carpet), or oral exploration (e.g., dramatizing of songs)*) [A]



**Sample Problems:** “How can you use the five bear counters to tell a story about them going to the woods?”  
 “In our story, one more duck went into the pond. How many ducks are in the pond now? How do you know?”

**Measurement (Attributes, Units, and Measurement Sense; Measurement Relationships)**

As children progress through the Kindergarten years, they:

- 13. compare and order two or more objects according to an appropriate measure (e.g., length, mass, area, temperature, capacity), and use measurement terms (e.g., hot/cold for temperature, small/medium/large for capacity, longer/shorter or thicker/thinner for length) [B]

**Student Talk:** “I lined the teddy bears up from shortest to tallest.” “This book is heavier than 10 cubes.” “We used 5 papers to cover the small table. It took us 15 papers to cover the big table.”

- 14. demonstrate, through investigation, an awareness of the use of different measurement tools for measuring different things (e.g., a balance is used for measuring mass, a tape measure for measuring length, a sandglass for measuring time) [B]
- 15. demonstrate awareness of non-standard measuring devices (e.g., feet, hand spans, string, or cubes to measure length; hand claps to measure time; scoops of water or sand to measure capacity) and strategies for using them (e.g., place common objects end to end; use cubes to plan the length of a road at the sand table or the block centre; measure the distance between the classroom and the water fountain in number of footsteps) [B, A]
- 16. demonstrate, through investigation, a beginning understanding of the use of non-standard units of the same size (e.g., straws, paper clips) [B, A]

**Sample Problems:** “How many blocks make up the length of your foot?”  
 “How many hand spans will it take to measure the table?” “We need to

see if the block trolley will fit in this space. How could we measure it?” “Jason says the train track is 6 building blocks long but Chris says the track is 10 building blocks long. How can we find out how long the track is?”

**Geometry and Spatial Sense (Geometric Properties; Geometric Relationships; Location and Movement)**

As children progress through the Kindergarten years, they:

- 17. explore, sort, and compare traditional and non-traditional two-dimensional shapes and three-dimensional figures (e.g., compare equilateral triangles with triangles that are not equilateral; sort different sizes of boxes, attribute blocks,<sup>5</sup> pattern blocks, a variety of triangles, shapes with three curved sides, objects that create an open shape with three lines) [C]

**Sample Problems:** “Look at the objects in the sorting circle. Can you guess the rule I was using to sort them? What other objects could we put in the circle?”  
 “Use three strips of paper to show me a triangle. Use your strips to show me something that is not a triangle.”

**Student Talk:** “We sorted our shapes into ones that are round and ones that have points.” “It is a weird, long triangle but it has three sides. It looks like a triangle that is all stretched out.”

- 18. identify and describe, using common geometric terms, two-dimensional shapes (e.g., triangle) and three-dimensional figures (e.g., cone) through investigations with concrete materials [C, A]

**Student Talk:** “It has three straight sides. It’s like the yield sign at the block centre.” “It’s like an ice cream cone. It has a point.”

- 19. compose pictures and build designs, shapes, and patterns in two-dimensional shapes, and decompose two-dimensional shapes into smaller shapes, using various tools or strategies (e.g., sand at the sand table, stickers, geoboards, pattern blocks, a computer program) [C, A]

5. For the purpose of children’s learning in Kindergarten, “attribute” refers to the various characteristics of two-dimensional shapes and three-dimensional figures, including geometric properties.

**Sample Problem:** After reading a story in which tangrams are used, the teacher asks the children to make one of the tangram designs in the story by first placing tangram pieces on a pre-made outline of the design, and then recreating the design by placing the tangram pieces beside the outline. The teacher could also ask what other shapes the children could make by using two magnetic shapes on a cookie sheet.

**Student Talk:** “My house has a pointed roof.” “My picture has lots of the same shapes – these ones are all round.” “This house shape has a triangle on the top and a square on the bottom.” “I used two triangles to make a rhombus.”

20. build three-dimensional structures using a variety of materials, and begin to recognize the three-dimensional figures that the structure contains [C]

**Student Talk:** “I built a castle. I put three cubes on the bottom. I used a cone for the tower.”

21. investigate the relationship between two-dimensional shapes and three-dimensional figures in objects that they have made [C, A]

**Student Talk:** “I built a rocket ship. Look at the cone on the top. The front is a big rectangle.” “I painted and stamped each side of the cube I made. I have six squares.”

22. demonstrate an understanding of basic spatial relationships and movements (e.g., use above/below, near/far, in/out; use these words while retelling a story) [C]

**Student Talk:** “I am sitting beside my friend.” “I have moved this block on top of the tower.”

### Patterning (Patterns and Relationships)

As children progress through the Kindergarten years, they:

23. identify, extend, reproduce, and create repeating patterns through investigation, using a variety of materials (e.g., attribute materials, pattern blocks, a hundreds chart, toys, bottle tops, buttons, toothpicks) and

actions (e.g., physical actions such as clapping, jumping, tapping) [D]

24. identify and describe informally the repeating nature of patterns in everyday contexts (e.g., patterns in nature, clothing, floor tiles, literature, schedules), using oral expressions (e.g., “goes before”, “goes after”, “morning, noon, and night”, “the four seasons”) and gestures (e.g., pointing, nodding) [D]

**Student Talk:** “The next word will rhyme with wall because there is a pattern in the words.” “The pattern goes ‘big button, small button, bead, big button, small button, bead’ so a big button goes next.”

### Data Management and Probability (Collection and Organization of Data; Data Relationships; Probability)

As children progress through the Kindergarten years, they:

25. sort, classify, and compare objects and describe the attributes used (e.g., initially: sort them into piles or collections on the basis of a common attribute; eventually: state the rule they used to sort, classify, or compare) [E]

**Student Talk:** “I sorted my animals by size.” “I grouped these all together because they are smooth.” “My shoes and your shoes all have zippers.”

26. collect objects or data and make representations of their observations, using concrete graphs (e.g., conduct simple surveys and use graphs to represent the data collected from questions posed; use a variety of graphs, such as graphs using people to represent things, bar graphs, pictographs; use tally charts) [E, A]

**Sample Problems:** “How many pockets are on our clothing today? How might we show how many pockets we have?”

**Student Talk:** “There are five people standing in the T-shirt row and six people standing in the sweatshirt row.” “More people like to eat apples than oranges.” “There is only one person left on the age chart that is 4 years old.”

27. respond to and pose questions about data collection and graphs [E]

*Teacher Prompts:* “How are these alike? Different? The same?” “Can you find another one that would go in that group?” “Let’s look at our graph. What does it tell you?” “How can we use the pictograph of helpers to find someone who knows how to tie your shoe?”

28. use mathematical language in informal discussions to describe probability (e.g., *chance, never, sometimes, always*) [E]

# SCIENCE AND TECHNOLOGY

## OVERVIEW

Young children are naturally curious and ask many questions about their world and the things that puzzle them. Science and technology in Kindergarten need to build on children's natural curiosity and sense of wonder. By observing and exploring the world using all their senses, with guidance from their teacher, and by interacting with their classmates, they begin to connect their prior knowledge and experience with their experiences in new contexts to develop an understanding of the world around them.

To meet the needs of these inquisitive children, the learning environment must be active, hands-on, child-centred, and inquiry-based. The teacher plays a critical role in creating an environment to support children's scientific inquiry and engagement in the technological design process. The teacher supports children through the problem-solving process, encouraging them to try something new, persist, and find alternative solutions. The teacher challenges children to use their observations to predict and draw conclusions, to think about how things work, and to think about why something happened, and encourages them to reflect on what they could do differently or change the next time. Teachers plan time for children to formally and informally share their questions and celebrate their discoveries.

The teacher's knowledge of how young children learn is the basis for providing carefully designed, high-quality, hands-on learning experiences within and outside the classroom. The use of concrete materials both commercial and found, models, visuals, books as sources of information, and computer software enhances children's vocabulary development and their scientific and technological knowledge.

The overall expectations apply to both science and technology. The specific expectations are organized under the following subheadings: Exploration and Experimentation, and Use of Technology. Children in Kindergarten begin to develop an understanding of foundational scientific and technological concepts and begin to develop skills through free exploration, focused exploration, and guided activities. They can learn about the physical properties of materials at the sand and water centres and about living things and ways of caring for them at the discovery centre. They can learn how to use simple machines such as ramps at the block centre and how to follow through with a plan at the technology centre.

Children need time and repeated opportunities to develop the skills required for learning in science and technology. They may need to be exposed to the same investigation on several occasions to reinforce what they have learned and to help them take what they have learned from one experience and apply it in another context – for example, an investigation of what happens to snow when it is brought inside or kept under different conditions. Children need opportunities to demonstrate their learning in many ways – through representing (e.g., drawing, making a diagram, or taking a photograph of a structure), recording (e.g., noting the number of blocks they used to build a structure in order to rebuild it on another day), or discussing their investigations with a classmate (e.g., describing how they got a marble to go from the top of the marble run to the bottom).

It is important for all young children to see themselves as scientists and as people who can work with technology as they investigate their world. Like scientists, they will be observing and sometimes recording their observations, making predictions, asking questions, making comparisons, investigating, drawing conclusions, and applying problem-solving skills. Science is not simply rote memorization of facts; it is a way of learning about or constructing understanding of the world in which we live. Developing this way of thinking and learning will lay the foundations for further learning as students continue to develop their understanding of science and technology throughout their years in school.

## OVERALL EXPECTATIONS

By the end of Kindergarten, children will:

- A. demonstrate an awareness of the natural and human-made environment through hands-on investigations, observation, questioning, and sharing of their findings;
- B. conduct simple investigations through free exploration, focused exploration, and guided activity, using inquiry skills (observing, questioning, planning an investigation, carrying out the investigation, and communicating findings);
- C. demonstrate an understanding of and care for the natural world;
- D. investigate and talk about the characteristics and functions of some common materials, and use these materials safely;
- E. recognize and use safely some common forms of technology.

## SPECIFIC EXPECTATIONS

### Exploration and Experimentation

As children progress through the Kindergarten years, they:

1. describe some natural occurrences, using their own observations and representations (e.g., drawings, writing) **[A]\***

**Student Talk:** “The snow is melting.”  
“The leaves are turning red.” “The rain made the worms come out.”

**Sample Contexts:** guided discussions, conversations with peers, learning centres

2. sort and classify groups of living and non-living things in their own way (e.g., using sorting tools such as hula hoops, sorting circles, paper plates, T-charts, Venn diagrams) **[A]**

**Teacher Prompts:** “How will we sort these things? What is the same?”

What is different?” “Show (tell) me how you sorted them.” “What is the name for all the things in this group?” “I wonder how else you could sort these.”

3. describe and/or represent, using their own observations, patterns and cycles in the natural world (e.g., respond to the teacher’s questions; use concrete materials to show the life cycle of a frog) **[A]**

**Teacher Prompts:** “What patterns do you see in the leaves we collected?” “How can you use pictures and words to keep track of how your bean plant is growing?”

4. pose questions and make predictions and observations before and during investigations (e.g., **initially:** explore freely; **eventually:** pose questions and discuss their observations with teacher guidance) **[B]**

\* The letters in boldface type that follow each specific expectation indicate the overall expectation to which the specific expectation is linked.

**Teacher Prompts:** “What would happen if we added snow to water?” “Let’s mark how far your car travelled past the ramp this time. What could you change to make the car go farther?”

- select and use materials to carry out their own explorations (e.g., *initially: select specific materials to build something; eventually: propose changes to the plan when prompted by the teacher*), and communicate their intentions [B]

**Student Talk:** “We need to put more blocks on the bottom so our tower won’t fall over this time.”

- communicate results and findings from individual and group investigations (e.g., *explain and/or show how they made their structure; draw conclusions from an experiment; record ideas using pictures, numbers, labels*) [B]

**Student Talk:** “The boat stays up. Let’s put some shells in the boat. Will it go down now? When we put *all* the shells in the boat, it sinks.”

- investigate, in various ways, how different forces make things move (e.g., *observe the effect that wind has on different objects, try out different ways to make a boat move in water, try to make a waterwheel move with water, explore ways in which different toys move*) [B]

- demonstrate an awareness of local natural habitats through exploration and observation (e.g., *communicate their findings about how a particular environment is used and what lives there, compare similarities and differences between such environments as the school yard and a park, talk about what would happen if something in the environment changed*) [C]

**Teacher Prompts:** “What might we notice if we went back to the woods in the winter?” “I wonder what would happen if we planted trees in our school yard.”

- participate in environmentally friendly activities in the classroom and the school yard (e.g., *put scrap paper in the scrap paper bin, put garbage in the waste receptacle, help maintain trees and plants in the school yard, turn off lights when leaving the classroom*) [C]

- investigate various materials that have different properties (e.g., *sand can be wet or dry, wood floats but rocks sink, rubber balls bounce better than plastic balls*) by manipulating and comparing them safely in individual and small-group explorations, and describe their observations [D]

**Student Talk:** “I can see through the plastic wrap. I can’t see through the tinfoil.”

## Use of Technology

As children progress through the Kindergarten years, they:

- demonstrate an awareness of the safe use of all materials and tools used in class (e.g., *walk when carrying scissors, wear goggles at the technology centre, clean up spilled water with a sponge or mop*) [E]

- experiment with simple machines and common objects (e.g., *construct gears using gear kits; use funnels, plastic tubing, or egg beaters to explore how water moves at the water centre; use a balance scale with different objects*), and describe their investigations [E]

**Student Talk: Initially** “My door works.” **Eventually** “My door opens like a real door.”

**Teacher Prompts:** “How will your imaginary people get in and out of your building?” “How can you make your gears move at different speeds?” “I wonder what would happen if you put water in a different funnel.”

- investigate and use familiar technological items (e.g., *different wheeled vehicles, a CD player or computer, a hammer and nails, a calculator, a variety of scoops at the sand table*), and describe their use in daily life [E]

**Student Talk:** “I need a stapler to make my book.” “If we use the big scoop, it won’t take as long to fill this big pail.”

**Teacher Prompts:** “Who do you think would use this tool? What would they use it for?” “What else could we use this item for?”

14. solve problems while designing and constructing things, using a range of tools, materials, and techniques (e.g., *build a house for toy people with found materials; build a tower with boxes of different sizes; design and build a bird feeder using recycled materials*) [E]
15. investigate and discuss how familiar objects are designed to meet a human need (e.g., *buttons for fastening clothes, shoes for walking, bandages for protecting cuts, wheels for moving things*) [E]

**Teacher Prompts:** “Which materials worked best?” “How would you solve the problem differently next time?” “What was challenging for you?” “Can you show us how you solved your problem?”

# HEALTH AND PHYSICAL ACTIVITY

## OVERVIEW

Young children begin school at different stages of physical, social, emotional, language, and cognitive development. Their physical growth and maturation are important aspects of their overall development. During the Kindergarten years, children need to establish a positive attitude towards health, safety, and physical activities in order to build a foundation for lifelong participation in and appreciation for healthy living. This can be achieved by ensuring that opportunities are provided for Kindergarten children to participate daily in a range of engaging, developmentally appropriate physical activities. As well, young children need to be introduced to concepts that promote a healthy, safe lifestyle.

Learning about healthy living includes more than being physically active. Kindergarten children need to explore and discuss the effects of physical activity, proper nutrition, and proper hygiene, as well as the effects of unhealthy choices. Safety is an integral part of being healthy, so young children need to start learning how to identify safe and potentially unsafe situations, how to handle them, and when to ask for help. The expectations related to safety need to be integrated into all areas of learning rather than taught in isolation.

The future health and well-being of young children are directly related to the development and strengthening of both their large and small muscles. Gross-motor control, also known as large-muscle control, involves the purposeful control and stabilization of major body movements, balance, and coordination. Fine-motor control, also known as small-muscle control, involves the manipulation of materials and tools and the use of hand-eye coordination. It is important for teachers to provide students with opportunities to use both large and small muscles in a variety of contexts (e.g., in the classroom, on the playground, in the gymnasium). Young children should be encouraged to work cooperatively with others and to persevere with their own physical activities.

Expectations for health and physical activity are organized under two subheadings: Health and Well-Being, and Physical Development and Activity. Because young children learn in an integrated way, these concepts, particularly those related to safety, need to be incorporated into all areas of their learning. Young children need to engage in enjoyable and stimulating learning activities that encourage exploration of their world; promote physical skills; enhance neural processing; and develop a general awareness of their bodies' needs, limitations, and capabilities. Learning opportunities should take into account children's interests, prior experience, changing needs, and increasing knowledge in all areas of learning.

Young children need to learn to make responsible, informed choices to develop, maintain, and enjoy healthy, safe lifestyles. Kindergarten children will be at varying points along the continuum of development. It is the teacher's role to provide developmentally appropriate activities for all children in order to ensure their safety and success. It is important that children develop positive attitudes towards and values that promote participation in physical activities. Learning to make healthy choices and participating in daily physical activity will provide young children with a foundation for overall well-being.



## OVERALL EXPECTATIONS

By the end of Kindergarten, children will:

- A. demonstrate an awareness of health and safety practices for themselves and others and a basic awareness of their own well-being;
- B. participate willingly in a variety of activities that require the use of both large and small muscles;
- C. develop control of large muscles (gross-motor control) in a variety of contexts;
- D. develop control of small muscles (fine-motor control) in a variety of contexts.

## SPECIFIC EXPECTATIONS

### Health and Well-Being

As children progress through the Kindergarten years, they:

1. begin to demonstrate an understanding of the effects of healthy, active living (e.g., *having daily exercise, adequate sleep, proper hydration*) on the mind and body **[A]**\*

**Student Talk:** “I like going for a walk after school.” “My heart is beating fast.” “I’m thirsty from all that running.” “Feel my forehead. I’m sweating from playing outside.”

2. investigate the benefits of nutritious foods (e.g., *nutritious snacks, healthy meals, foods from various cultures*) and explore ways of ensuring healthy eating (e.g., *buying nutritious food for meals, avoiding foods to which they are allergic*) **[A]**

**Student Talk:** “Eating fruit makes me strong.” “Jamal can’t eat peanut butter.” “I ate an apple for a snack today.”

**Sample Contexts:** field trips to a farm or grocery store, discussions in the classroom with a nutrition expert from the community

3. practise and discuss appropriate personal hygiene that promotes personal, family, and community health (e.g., *cover mouth when coughing or sneezing, use a tissue, wash hands, brush teeth*) **[A]**
4. talk about safe and unsafe situations as they arise in the classroom and discuss

ways to be safe (e.g., *memorize full name, address, telephone number; use scissors, learning centre materials, playground equipment safely*), including identifying and applying basic safety rules (e.g., *rules for bus and traffic safety, water and fire safety, electrical safety, Internet safety, outdoor play*) **[A]**

**Student Talk:** “No pushing on the slide.” “I wear my helmet whenever I ride my bike.” “He is carrying scissors the wrong way.”

5. discuss what action to take when they feel unsafe or uncomfortable, and when and how to seek assistance in unsafe situations (e.g., *action in response to bullying, inappropriate touching; seeking assistance from block parents, 911, playground monitors*) **[A]**

**Student Talk:** “There is broken glass in the yard.” “The climber is broken.” “A big kid was mean to me in the playground.” “If a dog that’s by itself growls at me, I should look for a block parent’s house.”

6. identify substances that are harmful to the body (e.g., *allergens, cleaning products, inappropriate medicines, tobacco*) **[A]**
7. discuss what makes them happy and unhappy, and why **[A]**

**Student Talk:** “I like it when my mom reads to me.” “I was sad when my friend moved.” “I don’t like it when I feel sick.”

\* The letters in boldface type that follow each specific expectation indicate the overall expectation to which the specific expectation is linked.

## Physical Development and Activity

As children progress through the Kindergarten years, they:

8. participate actively in creative movement and other daily physical activities (e.g., *dance, games, outdoor play, fitness breaks*) [B]
 

*Student Talk:* "Let's play musical hoops!"
9. demonstrate persistence while engaged in activities that require the use of both large and small muscles (e.g., *tossing and catching beanbags, skipping, lacing, drawing*) [B]
 

*Student Talk:* "I finally finished my painting. Come and see it." "Running around our field was hard, but I did it!"
10. demonstrate strategies for engaging in cooperative play in a variety of games and activities [B]
 

*Student Talk:* "It's your turn." "Can I try that?"
11. demonstrate spatial awareness in activities that require the use of large muscles (e.g., *find their own personal space in the gym, avoid bumping other children when moving, practise directional changes*) [C]
 

*Teacher Prompts:* "Move around the gym with your arms in the air. Now try moving in a different way." "How many directions can you move in?" "We're going to walk around our hoops. Now jump inside." "Be careful not to bump into your partner." "Find a space to stand where you can see me. We're going to stretch."
12. begin to demonstrate control of large muscles with and without equipment (e.g., *climb and balance on playground equipment; roll, throw, and catch a variety of balls; demonstrate balance and coordination during parachute games; hop, slide, or gallop in the gym or outdoors*) [C]
13. begin to demonstrate balance, whole-body and hand-eye coordination, and flexibility in movement (e.g., *run, jump, climb, walk on the balance beam, play beach-ball tennis, catch a ball, play hopscotch*) [C]
 

*Teacher Prompts:* "Can you balance on one foot?" "How many ways can you balance on a line? On two body parts? Three body parts?"
14. begin to demonstrate control of small muscles in activities at a variety of learning centres (e.g., *sand, water, visual arts centres*) and when using a variety of materials or equipment (e.g., *using small building blocks, using play dough, using salt trays, stringing beads, painting with paintbrushes, drawing, cutting paper, using a keyboard, using a mouse, writing with a crayon or pencil*) [D]
15. demonstrate spatial awareness by doing activities that require the use of small muscles (e.g., *using board puzzles, blocks, pegboards, finger puppets; folding; pouring; sorting three-dimensional figures*) [D]
16. use a functional grip in written communication to produce writing that they and others can read (e.g., *initially: use paintbrushes, markers, crayons that are short and thick; eventually: use pencils and unlined paper, produce letters in a range of sizes, produce a combination of upper- and lower-case letters that may include some letter reversals*) [D]

# THE ARTS

## OVERVIEW

Young children have an innate need to make sense of the world. The arts in their many forms provide a natural vehicle through which children express their interpretation of our world. Therefore, the arts play an important role in the development of children's communication and thinking skills.

The arts stimulate learning. They play an integral role in children's cognitive, motor, language, social, and emotional development. Learning through the arts helps develop decision-making skills, stimulate memory, facilitate understanding, develop symbolic communication, promote sensory development, and encourage creative thinking. Learning through the arts also fosters children's imagination, helps to develop empathy, promotes the development of relationships, and builds self-esteem, while enabling children to experience a sense of accomplishment. Participation in meaningful arts-related activities engages children in problem solving, as well as critical and creative thinking. The arts are a vehicle for children to understand different cultures as well as to express their own culture. Many studies demonstrate that learning through the arts also improves literacy and numeracy.

Expectations in the arts are arranged under the following three subheadings: Visual Arts, Music, and Drama and Dance. Each area of the arts is of equal importance. Children need to have ready access to a wide variety of materials, resources, and experiences that offer them different pathways through which they can demonstrate their learning. The creative process is the focus of the arts. Children need time to revisit materials and experiences to consolidate their learning. Carefully planned activities provide daily opportunities for children to explore visual arts materials, tools, and processes; music; and drama and dance. Various learning centres in the classroom (e.g., the puppet centre, the drama centre) enable children to apply and extend their learning.

It is important that young children see themselves as artists, musicians, dancers, and actors. Arts activities and experiences should be embedded in meaningful contexts in which children are thoroughly involved in the whole artistic process. Children need time to imagine, create, and explore in a non-threatening environment where they know their individual choices and responses are respected and valued.

Providing children with opportunities to express themselves through the arts supports their growing understanding in all areas of learning. Arts activities should also be integrated not only to support the learning of expectations in other areas, but also to support the diverse learning styles, interests, and abilities of individual children. Exposure to and involvement in a variety of art forms will provide young children with the foundation for a lifelong interest in and appreciation of the arts.

Teachers can invite local artists or children's family members who are involved in the arts into the school to enhance children's exposure to the arts and to introduce them to the arts as a profession and as a reflection of local culture and their community.

## OVERALL EXPECTATIONS

By the end of Kindergarten, children will:

- A. demonstrate an awareness of themselves as artists through engaging in activities in visual arts, music, drama, and dance;
- B. demonstrate basic knowledge and skills gained through exposure to the arts and activities in the arts;
- C. use problem-solving strategies when experimenting with the skills, materials, processes, and techniques used in the arts both individually and with others;
- D. express responses to a variety of art forms, including those from other cultures;
- E. communicate their ideas through various art forms.

## SPECIFIC EXPECTATIONS

### Visual Arts

As children progress through the Kindergarten years, they:

1. demonstrate an awareness of personal interests and a sense of accomplishment in visual arts (e.g., **initially**: willingly illustrate a page in a class book using their own ideas; **eventually**: offer to make a puppet for a play) **[A]\***

**Student Talk**: "I used to make my people like that. Now I make them this way."

2. explore a variety of tools, materials, and processes of their own choice to create visual art forms in familiar and new ways (e.g., use natural and recycled materials at a learning centre) **[A, B]**

**Student Talk**: "I used leaves and torn paper to make my picture." "We used blocks and boxes to make a sculpture like the one in the book." "I made a print with my sponge."

3. explore different elements of design (e.g., colour, line, shape, texture, form) in visual arts (e.g., **initially**: create different kinds of lines with finger-paint; **eventually**: explore colour mixing) **[B]**

**Student Talk**: "I cut a zigzag line." "I made different shapes with play dough."

4. use or demonstrate understanding of vocabulary related to visual arts in informal conversations and in

discussions about their learning (e.g., describe the shapes, colours, or types of lines used in their painting; talk about and point out techniques used by an illustrator in a picture book; respond to the teacher's questions about the textures in a collage) **[B]**

**Student Talk**: "I used a wiggly line." "I made a rubbing of my leaf." "I glued seeds on my picture to make it bumpy."

5. use problem-solving skills and their imagination to create visual art forms (e.g., choose materials to make a three-dimensional structure stable; choose an alternative way to fasten the materials if the first way is unsuccessful) **[C]**

**Teacher Prompt**: "I wonder how you are going to make sure your sculpture doesn't collapse."

6. express their responses to visual art forms by making connections to their own experiences or by talking about the form **[D]**

**Teacher Prompts**: "What does Tommy's painting make you think of?" "I wonder why the painter used so many wavy lines."

**Student Responses**: "That boy looks scared in the picture. I don't like being in the dark either." "All the wavy lines make the picture look as if it's moving."

\* The letters in boldface type that follow each specific expectation indicate the overall expectation(s) to which the specific expectation is linked.

7. respond to a variety of visual art forms from various cultures, including their own (e.g., *paintings, fabrics, sculptures, illustrations*) [D]
8. communicate their understanding of something (e.g., *a familiar story, an experience, a song, a play*) by representing their ideas and feelings through visual art [E]
 

**Student Talk:** "I'm painting a picture of the girl in the story we read." "I'm making a scary mask for the troll."

## Music

As children progress through the Kindergarten years, they:

9. demonstrate an awareness of personal interests and a sense of accomplishment in music (e.g., *initially: move to music in their own way or spontaneously keep the beat during a chant; eventually: choose rhythm instruments to make the sound effects they want for a song*) [A]
 

**Student Talk:** "I like to use the cymbals." "I used drums to make the sound of thunder." "I know that song. I'll sing it for you."
10. explore a variety of tools and materials of their own choice (e.g., *spoons, castanets, rhythm sticks, music software*) to create music in familiar and new ways (e.g., *initially: use shakers that they have made at a learning centre to keep the beat in a familiar song; eventually: add sound effects to a computerized slide show*) [A, B]
11. explore different elements (e.g., *beat, sound quality, speed, volume*) of music (e.g., *clap the beat of a song; tap their feet on carpet and then on tile, and compare the sounds; experiment with different instruments to accompany a song*) [B]
 

**Teacher Prompts:** "What different kinds of sounds can we make with the instruments?" "What instruments could we use to make a sound like horses' hooves?" "I wonder what this song would sound like if we sang it faster and softer."
12. use or demonstrate understanding of vocabulary related to music (e.g., *names of instruments; words for sound quality, speed, and volume*) in informal conversations and in discussions about their learning [B]
 

**Student Talk:** "That's a drum. It made a loud boom." "This song keeps getting faster." "I'm keeping the beat with my foot."
13. use problem-solving skills and their imagination to create music (e.g., *experiment with different instruments to create a rhythm pattern to accompany a familiar song; contribute to making a variation on a familiar song with the class*) [C]
14. express their responses to music by moving, by making connections to their own experiences, or by talking about the musical form [D]
 

**Teacher Prompts:** "What does this song make you think of?" "I wonder why the singer sang the last verse quickly."
15. respond to music from various cultures, including their own (e.g., *folk songs, Aboriginal chants, songs in different languages*) [D]
 

**Student Talk:** "I heard that song at a wedding. It makes me want to dance." "I can sing a song in my language."
16. communicate their understanding of something (e.g., *a book, an experience, a painting*) by participating in musical activities (e.g., *songs, chants*) [E]
 

**Student Talk:** "We made our sticks sound like thunder."

## Drama and Dance

As children progress through the Kindergarten years, they:

17. demonstrate an awareness of personal interests and a sense of accomplishment in drama and dance (e.g., *contribute their own ideas to role playing; move in ways of their choice in free dance; create their own actions for a song or chant and/or follow actions created by a classmate*) [A]

18. explore a variety of tools and materials of their own choice to create drama and dance in familiar and new ways (e.g., *use large blocks to create structures for dramatic play, use flashlights for shadow puppets, use streamers for dance movement*) [A, B]
19. explore different elements of drama (e.g., *character, setting, dramatic structure*) and dance (e.g., *rhythm, space, shape*) [B]  
**Teacher Prompts:** “What happened first? Next? At the end?” “How many different ways can you move in your space?” “Let’s move like the elephants in the story.”
20. use or demonstrate understanding of vocabulary related to drama and dance in informal conversations and in discussions about their learning (e.g., *words related to the concepts of roles, props, speed, direction, level*) [B]  
**Student Talk:** “I’ll be the bus driver.” “Let’s make some puppets for our play.” “I can dance really fast.” “I was a leaf falling. I started up high, then I spun around, then I fell on the ground.”
21. use problem-solving skills and their imagination to create drama and dance (e.g., *try out different voices for parts of a story or chant; find different ways to move to music, trying to connect the movement with the mood and speed of the music; create a sequence of movements*) [C]
22. express their responses to drama and dance by moving, by making connections to their own experiences, or by talking about drama and dance [D]  
**Teacher Prompts:** “How did the way Sean pretended to be the troll make you feel?” “What did the group’s puppet show make you think of?”  
**Student Responses:** “He scared me when he yelled ‘trip trap trip trap’.” “That puppet show we saw was just like the story we read.”
23. dramatize rhymes, stories, legends, and folk tales from various cultures, including their own (e.g., *use actions, pictures, words, or puppets to tell a story at the dramatic play centre or at the block centre*) [D]
24. communicate their understanding of something (e.g., *a poem, a story, a piece of music*) through drama and dance (e.g., *move like the animals in a poem; find different ways to move to music or a teacher prompt; move as if they are outside on a windy day after hearing a story about the wind; freeze like a statue*) [E]



# GLOSSARY

The definitions on the following pages are intended to help teachers and parents use this document. Many of the definitions are based on definitions already provided in the glossaries of publications of the Ministry of Education, which are listed below. Such definitions are indicated with one of the abbreviations.

EMS – *Early Math Strategy: The Report of the Expert Panel on Early Math in Ontario, 2003*

GEM – *A Guide to Effective Instruction in Mathematics, Kindergarten to Grade 3, 2004*

GER – *A Guide to Effective Instruction in Reading, Kindergarten to Grade 3, 2003*

GEW – *A Guide to Effective Instruction in Writing, Kindergarten to Grade 3, 2005*

Arts – *The Ontario Curriculum, Grades 1–8: The Arts, 1998*

Math – *The Ontario Curriculum, Grades 1–8: Mathematics, 2005*

S&T – *The Ontario Curriculum, Grades 1–8: Science and Technology, 1998*



**Aboriginal person.** A person who is a descendant of the original inhabitants of North America. The Canadian Constitution (1982) recognizes three primary groups as Aboriginal peoples: Indians, Inuit, and Métis.

**abstraction.** In counting, the idea that a quantity can be represented by different things. For example, 5 can be represented by 5 like objects, by 5 different objects, by 5 invisible things (5 ideas), or by 5 points on a line. (GEM)

**accommodation.** A support given to a child to assist him or her in completing a task (e.g., a marker for printing because of difficulties with gripping a pencil). (GEM)

**alphabet cards.** Cards containing letters of the alphabet written in both upper and lower case, and a picture and word that are clearly associated with each letter. This type of card helps children make links between letters and sounds. (GEW)

**anchors (of 5 and 10).** Significant numbers, inasmuch as 10 is the basis of our number system, and two 5's make up 10. Relating other numbers to 5 and 10 (e.g., 3 is 2 more than 1 and 2 less than 5; 7 is 3 less than 10 and 2 more than 5) helps children to develop an understanding of number magnitude and to acquire number sense and operational sense. (GEM)

**anecdotal comments.** Brief written descriptions made by the teacher of observed demonstrations of knowledge and skills by children. (GEM) Anecdotal comments should reflect only observed behaviours, not opinions or personal interpretations. They may be running accounts of what children say and do during a particular activity, or records of specific behaviours repeated over time. Children should be observed in a variety of situations throughout the year. Consistent record taking helps to reveal patterns of children's development.

**approximation.** A way of spelling words according to the way they sound to the child. As Kindergarten teachers analyse children's approximations in writing, the teachers can assess children's understanding of phonemic awareness, phonics, print conventions, and so on.

**assessment.** The ongoing, systematic gathering, recording, and analysis of information about a child's achievement, using a variety of strategies and tools. Its intent is to provide feedback to the teacher (and to the child, where appropriate) that can be used to improve programming. Assessment should be authentic – that is, based on classroom programs. *See also* evaluation. (GER)

**attribute.** A quantitative or qualitative characteristic of an object or a shape (e.g., colour, size, thickness, number of sides). (GEM)

**attribute materials.** Learning tools that help children learn about shapes, sorting, patterning, congruence, similarity, geometric properties, and so on. An example of attribute materials is "attribute blocks". The standard set of attribute blocks (60 blocks) includes five shapes (rectangle, square, circle, triangle, hexagon); each shape comes in three colours (red, yellow, blue), two sizes (large, small), and two thicknesses (thick, thin). (Math)

**big ideas.** In mathematics, key mathematical concepts. Helping children focus on these big ideas encourages children to make connections in mathematics. For example, the big ideas for Kindergarten to Grade 3 in Number Sense and Numeration of the Ontario curriculum and Kindergarten program are counting, operational sense, quantity, relationships, and representation. (GEM)

**cardinality.** The idea that the last count of a set of objects represents the total number of objects in the set. (GEM)

**classifying.** Making decisions about how to sort or categorize things. Classifying objects and numbers in different ways helps children recognize attributes and characteristics of objects and numbers, and develops flexible thinking. (GEM)

**collage.** A form of art in which a variety of materials (e.g., fabric, paper, objects) are glued to a flat background. (Arts)

**composition of numbers.** The putting together of numbers (e.g., 2 and 3 can be put together to make 5, or 4 and 1 can be put together to make 5). (GEM)

**comprehension.** The ability to understand; in reading, the process of making sense of text. To understand or draw meaning from a written text, readers must interact with it, combining information from their personal experience and background knowledge with the information they derive from the text itself through the application of reading strategies. (GER)

**conceptual understanding.** The ability to use knowledge flexibly and to make connections between mathematical ideas. These connections are constructed internally by the learner and can be applied appropriately, and with understanding, in various contexts. (GEM)

**concrete materials.** Objects and materials that can be handled. Children make use of these in their explorations and investigations. (S&T) Some concrete materials may also be called “manipulatives”.

**conservation.** The idea that the count for a set group of objects stays the same no matter whether the objects are spread out or are close together. (GEM)

**context.** The environment, situation, or setting in which an event or activity takes place. Real-life settings often help children make sense of new concepts. (GEM)

**counting on.** A strategy for addition in which the child starts with the number of the known quantity and then continues counting the items in the unknown quantity. (GEM)

**critical awareness.** The ability to evaluate something from multiple angles. For example, children may begin to respond to a text they have heard from their own point of view, or may connect their thinking to a prior experience or another text they know. Later, they may see events in the text from another person’s point of view. A child may begin to demonstrate critical awareness after it is modelled by the teacher.

**decomposition of numbers.** The taking apart of numbers (e.g., 5 can be taken apart as 3 and 2 or 4 and 1). (GEM)

**developmentally appropriate.** Suitable to a child’s level of maturation and cognitive development. Children need to encounter concepts that are presented at an appropriate time in their development, with a developmentally appropriate approach, and in a way

that fits their needs (e.g., writing on unlined paper rather than lined paper in a notebook). The concepts presented in Kindergarten should be challenging but attainable for most children.

**differentiated instruction.** A method of instruction in which the teacher considers the needs of each child at his or her current stage of development, and then uses a learning approach with that child that responds to his or her individual needs. As a result, each child’s growth is maximized.

**diversity.** In reference to a society, the variety of groups of people who share a range of commonly recognized physical, cultural, or social characteristics. Categories of groups may be based on various factors or characteristics, such as gender, race, culture, ethnicity, sexual orientation, ability/disability, age, religion, and socioeconomic level.

**dot plates.** Paper plates with peel-off dots applied in various arrangements to represent numbers from 1 to 10. Dot plates are useful in pattern-recognition activities. (GEM)

**evaluation.** A judgement about the quality of a child’s work at a point in time. *See also* assessment.

**explicit instruction.** Clear, direct, purposeful teaching of specific knowledge, skills, and strategies. In explicit instruction, the teacher explains what a strategy (for example) is, why it is used, and when to use it; models how to use it; and guides children as they practise it. (GER)

**exploration.** An instructional activity in which children pursue a problem (e.g., a math problem), idea (e.g., the concept of floating and sinking), or investigation initiated by the child and/or the teacher. Explorations help children to develop problem-solving skills, learn new concepts, and apply and deepen their understanding of previously learned concepts and skills.

**fine-motor control.** (Also known as small-muscle control.) Control over the muscles that regulate the small, or fine, movements of the fingers, hands, and wrists. The development of fine-motor control can be enhanced in the early years by the development of gross-motor skills. For example, giving young children big pieces of paper and large crayons allows them to practise their larger

movements and supports the development of their fine-motor skills. Examples of activities that develop fine-motor skills include: working with blocks; threading beads; drawing with markers and short, thick crayons; fastening and unfastening snaps, buttons, and zippers; cutting with scissors; building structures with small toys; and doing puzzles.

**five frame.** A 1 by 5 array onto which counters or other manipulatives are placed to help children relate a given number to 5 (e.g., 4 is 1 less than 5) and recognize the importance of 5 as an anchor in our number system. (GEM)

**focused exploration.** A method of instruction in which children use the materials and equipment available in the classroom in ways of their choosing. The teacher observes and listens while children are exploring, and provides guidance as needed, using information gathered from assessment. For example, the teacher may pose a question, prompt deeper thinking, or introduce new vocabulary.

**force.** Any push or pull that causes motion, activity, or change.

**free exploration.** A key instructional activity that is initiated by children using the materials available in the classroom in ways of their choosing. Teachers observe and listen while children are exploring freely as part of ongoing assessment, but do not guide the exploration as they do during focused exploration.

**functional grip.** Any way of holding a writing instrument that allows the child to control the movement of the instrument.

**gear.** A rotating wheel-like object with teeth around its rim. A gear is used to transmit force to another gear with matching teeth. (S&T)

**geoboard.** A commercially produced learning tool that helps students learn about perimeter, area, transformations, and so on. A geoboard is a square piece of plastic or wood with pins arranged in a grid or in a circle. Elastics are used to connect the pins to make different shapes. (Math)

**gross-motor control.** (Also known as large-muscle control.) Control over the larger muscles in the arms, legs, and torso. Activities that develop gross-motor control include walking, running, throwing, lifting, kicking, and so on. The development of gross-motor control also increases body awareness, reaction speed, balance, and strength.

**guided activity.** A key instructional activity that is initiated by the teacher. On the basis of assessment information, the teacher may pose a series of questions, provide prompts to extend thinking, ask the child to demonstrate a familiar concept in a new way, encourage a child to try a new activity, and so on.

**guided reading.** An instructional strategy in which the teacher works with a small group of children (1–3 in Kindergarten) who have comparable reading skills. The teacher selects an appropriate text (one that children can read with 90–95 per cent accuracy), reviews it with the lesson and the reading levels/skills of the group members in mind, and introduces it to the group in a manner appropriate to their skills. Children then read the book quietly, but aloud, while the teacher offers support as necessary. The composition of a guided reading group changes as a result of the teacher’s observation and assessment of individuals in it.

**high-frequency words.** Words that occur frequently in texts for beginning readers. High-frequency words are taught and posted on word walls in classrooms so that beginning readers can become familiar with them and add them to their bank of sight words. (GER) *See also* word wall.

**higher-order thinking skills.** Thinking that goes beyond the recall of basic facts and enables children to solve problems, understand and use concepts of some complexity, and achieve a deeper understanding. Examples of these skills include investigating, comparing, experimenting, and creating. (GER)

**hundreds chart.** A 10 by 10 grid that contains the numbers from 1 to 100 written in a sequence that starts at the top left corner of the chart, with the numbers from 1 to 10 forming the top row of the chart and the numbers from 91 to 100 forming the bottom row. The hundreds chart is a rich context for exploring numbers and relationships. (GEM) An example of a hundreds chart is a “hundreds carpet”.

**independent reading.** A key instructional strategy in which children choose their own reading material. Children need time regularly to choose material for reading. The teacher should guide children, based on assessment, to choose books appropriate for their level (e.g., caption books, pattern books).

**independent writing.** A key instructional strategy in which children choose their own writing topics. Children need opportunities to independently apply their writing skills to their choice of topics and materials (e.g., create a sign using blocks, record an experiment, write a shopping list in the dramatic play centre). Approximations of spelling provide insight into the children's developing skills.

**inquiry.** An instructional activity based on a more focused and systematic version of exploration used in science. The steps include making observations, posing questions, examining books and other sources of information to check what is already known, planning investigations, making predictions, and communicating results and findings.

**integrated learning.** A form of learning in which children are exposed to multiple skills or areas at the same time and encouraged to make connections. Integrated learning often occurs when children are exposed to real-life situations and activities in the classroom, home, school, and neighbourhood. For example, a trip to the grocery store can develop literacy, numeracy, and social skills, as well as provide an opportunity to acquire nutritional information.

**interactive writing.** A key instructional strategy in which the teacher and children share the task of scribing a message. The teacher selects an appropriate teaching point. The teacher and children share the pen to create a message, and the finished text can then be revisited in multiple ways. (GEW)

**investigation.** An instructional activity in which children pursue or explore a problem or idea. Investigations help children to develop problem-solving skills, learn new concepts, and apply and deepen their understanding of previously learned concepts and skills.

**learning-based play.** A method of instruction that uses children's natural inclination to make sense of the world through play, guided by the teacher. Through play, children engage

in social interaction, hands-on exploration, and discovery; increase their understanding of new ideas or concepts; and solve problems in a variety of ways. The active learning and sensory stimulation provided by learning-based play enhances children's core brain development.

**learning styles.** Different ways of learning. For instance, visual learners need to see visual representations of concepts. Auditory learners learn best through verbal instructions and discussions, by talking things through and listening to what others have to say. Tactile (kinaesthetic) learners learn best through a hands-on approach, actively exploring the physical world around them. (EMS)

**literacy.** The ability to read and write at a level that allows one to deal competently with information related to the demands of the workplace and day-to-day life. The goals of literacy instruction include the ability to understand texts and the ability to clearly express ideas through writing. (GER)

**magnitude.** The size of a number or a quantity. Movement forwards or backwards, for example, on a number line or a scale results in an increase or decrease in number magnitude. (GEM)

**manipulatives.** Objects that children handle and use in constructing their own understanding of skills and in demonstrating that understanding. (EMS) Manipulatives may also be called "concrete materials".

**metacognition.** Consciousness of one's own thinking processes. Metacognitive strategies can be used to monitor, control, and improve one's own thinking and learning processes. (GER)

**modelling.** A demonstration by the teacher of a routine, task, or strategy to children. By imitating the model, children become aware of the processes needed to do the routine, task, or strategy. The teacher may "think aloud" to make the process clearer. (GER)

**movement is magnitude.** The idea that, as one moves up the counting sequence, the quantity increases by 1, and as one moves down or backwards in the sequence, the quantity decreases by 1. (GEM)

**musical hoops.** A version of musical chairs played with hula hoops.

**non-standard units.** Measurement units used in the early development of measurement concepts – for example, paper clips, cubes, hand spans, and so on. (GEM)

**observations.** Records of what children do, say, and show, gathered by the teacher as evidence of how children are progressing and learning. (GEM)

**one-to-one correspondence.** In counting, the idea that each object being counted must be given one count and only one count. (GEM)

**open-ended questions.** Questions that can be answered in a variety of ways. (GEM)

**order irrelevance.** The idea that the counting of objects can begin with any object in a set and the total will still be the same. (GEM)

**ordinal number.** A number that shows relative position or place – for example, first, second, third. (GEM)

**pattern blocks.** Commercially produced learning tools that help children learn about shapes, patterning, angles, and so on. Standard sets include: green triangles; orange squares; tan rhombuses and larger blue rhombuses; red trapezoids; and yellow hexagons. (Math)

**patterned text.** Text for beginning readers that repeats words, phrases, and/or sentences. The repetition helps young readers learn to read. (GER) An example of patterned text is a “pattern book”.

**phoneme.** The smallest part of spoken language that makes the meaning of one word different from that of another. A phoneme may be represented by more than one letter (e.g., *ch* in *check*). (GER)

**phonemic awareness.** The ability to hear, identify, and manipulate phonemes in spoken words. (GER)

**phonics.** The study of the relationship between the letters (graphemes) of written language and the individual sounds (phonemes) of spoken language. (“Letter-sound relationships” in GER.)

**phonological awareness.** The ability to focus on and manipulate not only phonemes, but also larger spoken units such as syllables and words. (GER)

**picture walk.** A pre-reading activity in which children review the pictures and other graphic material (e.g., charts) in a text, as well as picture titles and captions, to predict the content of the text. (GER)

**prior knowledge.** The knowledge that a child has acquired to date and that he or she brings to an experience and draws on to understand that experience. Children learn new concepts by relating them to their prior knowledge and experience. (GER)

**problem solving.** Engaging in an activity for which the solution is not obvious or known in advance. To solve the problem, children must draw on their prior knowledge, try out different strategies, make connections, and reach conclusions. Learning by inquiry and investigation is very natural and important for young children. (EMS/GEM)

**prompt.** An open-ended phrase or question given to children in order to clarify thinking, elicit deeper thinking, and extend their learning. (GEM)

**properties.** Observable characteristics of materials that can be determined using any of the five senses.

**quantity.** The “howmuchness” of a number. An understanding of quantity helps children estimate and reason with numbers. (GEM)

**read-aloud.** A key instructional strategy in which the teacher selects a book that is beyond what children can read on their own and reads it aloud to the class to promote a love of reading, to improve children’s level of comprehension, to build children’s knowledge of vocabulary and language structures, to expose children to “book language” (literary text or devices), and to demonstrate reading strategies. (GER)

**reading strategies.** Strategies that readers consciously use to make sense of text. Some strategies are used primarily to help identify and understand at a basic level the words and sentences that make up the text. Others are useful for achieving a more comprehensive or deeper understanding of the text (e.g., asking questions such as “How does this connect with what I already know?”). (“Comprehension strategies” in GER.) In Kindergarten, these

strategies are most often modelled, taught, and observed during read-alouds, shared reading, or small-group shared reading. Some children may demonstrate the strategies during independent reading.

**scaffolding.** An instructional technique in which the teacher breaks an idea, concept, or strategy into small steps, models the steps, provides support as children learn the strategy, and then gradually shifts responsibility for applying the idea, concept, or strategy independently to the children. Scaffolding allows children to build on their prior knowledge and modify their current understandings; where prior knowledge is lacking, modelled and shared experiences help bridge the gap. (GER)

**sculpture.** A work of art in three dimensions (i.e., with height, width, and depth) that is meant to be seen from all sides. (Arts)

**self-concept.** The learned beliefs, attitudes, and opinions that each child holds to be true about him- or herself. A child's self-concept is complex and dynamic.

**semantic knowledge.** Knowledge that helps readers guess or predict the meaning of text on the basis of context (including illustrations) and prior knowledge. (GER)

**shared reading.** A key instructional strategy in which the teacher reads from large books or other texts that all children can see and follow (e.g., commercially published and class-made big books, pocket charts and other types of charts, posters, murals). The text is read several times, first by the teacher, and then with the children, who join in the reading when they feel comfortable doing so, at key instructional points, or when the text is repeated. (GER) In Kindergarten, small-group shared reading is an example of differentiated instruction.

**shared writing.** A key instructional approach in which the teacher and children work together on a piece of writing. The teacher is the scribe, and the children respond to prompts and questions from the teacher in order to help create the text. The teacher selects an appropriate teaching point and introduces the writing activity to the children. The children share their ideas, and the teacher scribes and composes. The teacher and the children read the finished text together. (GEW)

**simple machine.** A basic mechanical device for applying a force. Examples include ramps, levers, wheels and axles, wedges, and so on. In Kindergarten, children investigate and explore simple machines in various ways and places (e.g., at the block centre, at the sand and water learning centres).

**sorting circle.** A commercial or hand-made product consisting of several large, flat disks or hoops of different sizes and/or colours. Sorting circles are used to teach children about similarities and differences by having them sort a mixed group of objects onto different disks or hoops.

**stable order.** The idea that the counting sequence stays consistent. It is always 1, 2, 3, 4, 5, 6, 7, 8, ..., not 1, 2, 3, 5, 6, 8. (GEM)

**subitizing.** Being able to recognize the

number of objects at a glance without having to count all the objects. (GEM)

**syntactic knowledge.** Knowledge of language patterns and grammatical structures that helps readers make sense of text. This knowledge helps readers predict text and detect when something has been misread (that is, because the word does not sound right to the reader). (GER)

**T-chart.** A chart that has been divided into two columns, so that the divider looks like the letter T. T-charts are used to compare and contrast information and to analyse similarities and differences. (GER)

**tangram.** A Chinese puzzle made from a square cut into seven pieces: two large triangles, one medium-sized triangle, two small triangles, one square, and one parallelogram. (Math)

The Ministry of Education wishes to acknowledge the contribution of the many individuals, groups, and organizations that participated in the development and refinement of this curriculum policy document.







Printed on recycled paper

ISBN 1-4249-1466-3 (Print)

ISBN 1-4249-1467-1 (TXT)

ISBN 1-4249-1468-X (PDF)

05-312

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