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# Materials and Environments that Promote Learning in the Primary Years

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Teachers can use multiple strategies to create a stimulating and responsive environment for children in the primary years. These strategies can lead to children’s overall social, emotional, physical, and cognitive development.

To promote optimal development of the whole child, children need a variety of materials available to them daily that provide both challenge and success. They also need daily exposure to music, art, and movement activities.

## The Physical Space for Learning

The arrangement of the physical environment can have a big impact on teaching and learning. The physical environment needs to incorporate natural materials and objects. Having materials in the classroom that are made of natural materials (wood, living plants, natural lighting, and windows) has an impact on the atmosphere of learning. Given what is known about the amount of time (or lack thereof, as it may be) that children spend outside in natural environments, educators need to be intentional in bringing the natural world indoors or in providing learning opportunities outdoors.

The physical environment can promote language development and socialization as well as cognitive learning if it is set up intentionally to foster these skills. One of the best ways to do this is for children to sit at tables rather than at individual desks.

Another option is to group three or four individual desks into pods. Ensure that the tables and chairs are appropriately sized for all children in the classroom. This may mean that children of differing abilities or sizes need to have different chairs or tables to meet their needs.

Incorporating children’s work into the classroom ensures that children and their families feel represented in the space. Pictures of children and their families are displayed throughout the classroom, and a respect for the child’s culture is com-

municated through the physical space of the classroom. In addition, stories that children tell to adults can be written and displayed, and open-ended artwork can be displayed throughout the classroom as a validation of children’s work and creativity.

Another element of an environment that promotes language and social development is the inclusion of centers within the classroom. Children should have access to a variety of different types of materials within the classroom each day. Time in the kindergarten classroom is devoted each day to unstructured play in centers. Child-initiated and teacher-supported play in centers greatly fosters language and social development and helps children develop greater understanding of academic concepts. Center time opportunities for children to interact with the teacher and other children are essential to healthy development and outcomes.

## Social and Emotional Learning

Learning social skills, emotion identification, and coping skills are some of the most important factors influencing the ability to learn academic concepts and generate new ideas. Children must feel safe, connected to others, and valued in a classroom to learn. Part of this learning can be aided by intentionally placing materials in the classroom that foster development of social-emotional skills. Some ideas are:

- Set up a dramatic play center where children can act out several different roles (construction worker, store owner, princess, parent, doctor, etc.). The dramatic play center is an extension of the content being taught and changes biweekly or monthly. Add new materials to the dramatic play center as children begin to have new ideas. Perhaps they think that the store should become a pizza parlor. The same concepts (money, writing down orders, sorting, etc.) can be taught through the pizza parlor.
- Provide materials such as blocks, board games, and card games that encourage children to work together.

These materials also teach math, science, and reading concepts.

- Arrange the physical environment to promote peer interactions. Rotating centers periodically increases the chances that children will interact with one another. Using materials that promote cooperation and sharing, such as rocking boats, large pieces of paper for many children to draw on, and dramatic play props, has been shown to increase social development.
- Provide a private space where children can work alone or with one other person. Private space is easy to incorporate in a reading or listening center where the space is intentionally designed for one or two children. Include cozy materials such as a rug, couch, curtains, stuffed animals, and blankets.
- Respectful language is encouraged in the classroom at all times. Children are encouraged to work through disagreements with their peers (and the teacher) by coming up with their own solutions. For some children, the teacher must be an active participant in these discussions. Other children can negotiate these conflicts on their own.

### **Physical Learning**

Children need a variety of movement experiences and materials to practice both large and fine motor skills. Some ideas to help foster children's physical development are:

- Provide daily access to and use of an outdoor space. This time is equally important as instructional time indoors. The outdoor environment provides a wealth of opportunity for engagement with science, math, and even literacy as well as experiences and equipment that promote motor development of the whole body, e.g., swings, slides, riding equipment.
- On rainy or extremely cold days, children should have access to materials indoors that promote the same large motor skills as they would be developing outside, such as jumping, throwing, and climbing. Therefore, have ready for indoor play balance beams, hopscotch mats, hula hoops, balls, etc.
- Incorporate music and movement times into the kindergarten day. It is not enough for children to have music specials once a week. Provide musical props (streamers, shakers, etc.) and a variety of music genres for dancing, transitions, and singing.
- A variety of materials should be provided that encourage development of both large and small motor skills. Fine motor materials include beads for stringing, lacing cards, scissors, pencils, paintbrushes, and clay.

### **Language and Literacy Learning**

Language and literacy development are essential skills for future academic success. There are materials that can be integrated into all areas of the classroom that support these skills and supplement the language arts curriculum. Some ideas to support language and literacy in the kindergarten classroom are:

- Children can make labels for items in the classroom. Underneath these labels the teacher could also type the name. A variety of books, including different genres and types, are thoughtfully stored and easily accessed by children at all times. Include the following in the library:
  - Books that demonstrate diverse cultures, genders, and abilities
  - Both fiction and nonfiction books
  - Poetry books
  - Books/stories that are written by children
  - Books without words
  - Books for content learning (these relate to the concepts and vocabulary of the week)
  - Books for buddy and group reading
  - Books for individual reading
  - Books on tape
  - Photograph albums
  - Books with props
  - Books about careers (e.g., military, firefighter, farmer)
- Materials for writing and drawing are infused into all learning areas. There are journals in the science center, shopping lists in the dramatic play grocery store, white boards in the writing center, and blank preassembled books for writing new stories.
- There is a designated place to store the children's works in progress. These materials are available to children so they can return to and add to their projects as they have time.

### **Cognitive Learning**

Cognitive learning can mean many things. This section focuses on materials for encouraging science, math, and problem-solving skills. All of these concepts can be integrated into multiple experiences that cross learning domains.

#### **Math**

Several materials can be used to support math learning and can be integrated into many different areas of the kindergarten classroom such as the dramatic play center, on rugs in the classroom, or in the game center. Some materials that support math learning are:

- Cards for identifying colors, shapes, and patterns. Look for patterns in children's clothing (stripes) to incorpo-

rate patterns into everyday experiences and to make the patterns meaningful to children. Real and pretend money to help children begin to understand the value of money and practice basic addition and subtraction.

- Board games as tools for counting, adding, and subtracting. Games such as Chutes and Ladders® and Connect Four® are wonderful for supporting math learning, and social learning as well.
- Card games to help children identify numbers and figure out which numbers represent more or less than other numbers (10 is higher than 4). Nonstandard as well as standard units of measurement (sticks, string, rulers and yard sticks) can be used to facilitate concepts of tall, short, big, small, etc.
- A scale for weighing objects in the classroom can be an especially powerful tool near the sensory/discovery area. Children can weigh the materials on the sensory table and begin to understand weight and balance. Dramatic play centers that incorporate math concepts (grocery store) are a great way to extend math concepts in other areas.
- Collections of materials are available throughout the classroom (for sorting and counting).

### Science

Like math materials, science materials can be infused into many areas of the classroom. Doing so helps children to generalize knowledge from one area to the next. Some ideas for supporting science learning in the classroom are:

- Include living things in the classroom. These could be plants that the children help take care of or a class pet that children observe, care for, and learn about. Collections of natural materials are placed throughout the classroom. Some materials that could be included are corn, wheat, rocks, sticks, leaves, feathers, and seeds.
- Tools for measurement, dumping, pouring, and scooping are made available to children in informal (sensory table) and formal (baking experiments) settings. Nonfiction books and field guides about birds, trees, plants, and life cycles are placed throughout the classroom for children to access when they have a question or are searching for an answer.
- Journals for children to record predictions and draw the growth of plants, flowers, and other objects that interest them. Children can use journals to make predictions about color mixing, cooking, and other scientific experiments. Magnifying glasses that are easily accessible by children can be taken outside to examine insects, trees, and other objects of interest.

### Problem Solving

Any material that encourages children to work together will encourage the development of problem-solving skills. Building problem-solving skills helps children develop self-regulation skills, independence, and confidence in their social interactions, as well as developing higher cognitive functioning. Some materials that promote problem solving are:

- Blocks and other building materials are available to children to build complicated structures. Many blocks of a variety of types and sizes are available to children in this area of the classroom.
- Puzzles are available for children to use, either independently or with the help of another child or adult. Not all children are at the same challenge level with puzzles, so it is important to have puzzles appropriate for several ability levels.
- Use recycled materials such as tubes, lids, boxes, and egg cartons for building. These unusually shaped materials force children to think creatively and devise new strategies for building.

### Fine Arts Learning

Working with art materials supports the development of fine motor skills, which has a large impact on a child's ability to write. In addition, music is important because it provides opportunities for movement that stimulate the brain. Music also helps children self-regulate and learn patterns. Many academic concepts such as counting, syllables, and rhymes can be taught through music. Some opportunities to incorporate fine arts learning into the kindergarten classroom are:

- Include a variety of papers from which children may choose (construction, tissue, lined, blank). Each type of paper lends itself to a different use, so having many types available broadens the spectrum of what children can do with the paper.
- Offer a wide variety of writing/drawing/painting utensils, such as sticks, pencils, crayons, markers, and paintbrushes. Locate them in places where they can be used naturally.
- Provide collage materials for children to use, such as feathers, tissue paper, and magazine cutouts. Have scissors and glue available and accessible to children.
- Keep a variety of music in the classroom for the children to access at both structured and unstructured times.
- Use music as a cue for transitions (clean up, finish writing, five more minutes). Often children attend to musical cues more than they do to verbal directions given by adults.

- Allow kindergarteners to access the music center during center time. This helps children gain more experience with music, rhythms, beats, and patterns.
- Display and organize several types of musical instruments, such as drums, shakers, streamers, and rhythm sticks that children can use during center times.

### Putting It All Together

To promote learning and development in the primary years, it is important to use a diverse range of materials wisely, effectively, and intentionally. When children have access to a variety of materials (classroom, natural, home), opportunities for them to engage in creative expression, to problem solve with peers, and to practice key language and social skills is increased. Furthermore, implementing the multiple strategies presented in this publication not only provides examples of how teachers can create a stimulating and responsive environment for children, but also how such practices lead to the overall social, emotional, physical, and cognitive development of children in the primary years.

### Resources

A Kindergarten for the 21st Century: Nebraska's Kindergarten Position Statement:

<http://www.education.ne.gov/oec/pubs/KStatement.pdf>

Texts4Teachers: <http://extensiontexts.unl.edu>

The Learning Child: [www.extension.unl.edu/child](http://www.extension.unl.edu/child)

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