CHAPTER 5
The Transitional Kindergarten Learning Environment

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http://www4.scoe.net/ims/webcasts/cf/index.cfm?fuseaction=archivedDetail&eventID=140&archiveID=254

The Transitional Kindergarten Learning Environment (YouTube with Captions)
http://www.youtube.com/watch?v=c_x80Z9Alps
The TK classroom environment sets the stage for learning and interactions between students and adults. It also establishes the expectations for behavior in the classroom (Thompson and Twibell 2009). An attractive, well-organized classroom invites students to actively explore and engage with the materials and access classroom instruction. Carefully selected, age-appropriate materials build the conceptual knowledge of TK students, and are directly related to skills and content in the California Preschool Learning Foundations, California’s Common Core State Standards for kindergarten, and Content Standards for California Public Schools (kindergarten). TK teachers who purposefully incorporate elements of students’ home cultures and diverse experiences into the classroom environment encourage and establish levels of comfort and security (Riley et al. 2008). Thoughtful consideration should be given to the needs of individual students such as accessible spaces and activities, multi-sensory materials, and

**Vignette**

After finishing whole-group English language arts instruction, it is choice time in Mr. Ting’s classroom. Students are spread throughout the room engaging in a variety of activities in the different learning areas. A small group of students builds an elaborate tower with blocks in the Construction Area. Nearby, another group prepares “dinner” in the Dramatic Play Area using empty food containers that were donated by families. Across the room, two students work in parallel at the Writing Area. They occasionally turn to converse with one another about their individual letter writing. Mr. Ting scans the environment and then kneels down next to students who are sketching pictures of the silkworm habitat in the Science and Discovery Area. He comments on the different details highlighted in their drawings and encourages the students to use the magnifying lenses to closely examine the silkworm cocoons. He pauses as he watches to see how the students respond to his suggestion. He then moves over to engage with students in the Mathematics and Manipulatives Area where he is able to closely observe and coach two students playing a board game. At the same time, he also notices the skills utilized by another student playing a pre-reading game in the Computer Area.
regulating routines that ensure successful learning experiences for all students.

Incorporating student ideas, work, and experiences into the environment will support and bring about effective teaching and learning. Specific strategies are discussed in this chapter for planning indoor learning areas and outdoor spaces. Emphasis is placed on the selection and presentation of open and closed-ended learning materials and the display of students’ important work.

The Transitional Kindergarten Classroom

As stated in the Transitional Kindergarten Planning Guide, the “TK year should include a modified kindergarten program based on evidence-based practices” (CCSESA 2011, 19). The social-emotional development of the TK student must be kept in mind when learning environments are created. The classroom should include a balance of space for direct-instruction as well as opportunities for student-initiated exploration and active learning. The spaces designated for choice in the TK classroom must be more structured than what would be found in a preschool program, and they should include materials that highlight and introduce concepts from the California Preschool Learning Foundations, California’s Common Core State Standards for kindergarten, and Content Standards for California Public Schools (kindergarten). This intentional approach to promote structured choice permits exposure to the standards while still facilitating active learning.

The TK classroom needs designated spaces for large-group instruction as well as areas for small-group learning and individual exploration (CDE 2011; Copple and Bredekamp 2009). A large rug in a central location makes an ideal spot for students to gather as a classroom community to sing songs, engage in movement experiences, and participate in letter and number games. A small space with a bookshelf works well as a quiet nook for reading stories. Additional areas for learning can include spaces for writing, constructing with blocks, art, science, and manipulatives.

Several different terms are used to refer to these areas—for example, “centers,” “learning areas,” and “work stations.” The particular term used to refer to these learning spaces is a program and teacher decision that relates to the language of the daily routine. For consistency and clarity in this document, these spaces are called learning areas. The specific learning areas referenced in this document are the Construction Area, Reading Area, Listening Area, Language and Literacy Area, Art Area, Computer Area, Science and Discovery Area, Math and Manipulatives Area, Sensory Area, and the Dramatic Play Area.

When teachers consider the different spaces in the classroom, universal design concepts are paramount for creating learning areas that are free of clutter and barriers. Using the three components of universal design for learning (UDL), the TK teacher is able to orchestrate an organized and manageable work environment where all children can move freely between learning areas and readily participate in activities. The first step is to think about how to engage the student in a task; this is done by constructing spaces that can be readily changed if a child with a wheelchair has difficulty reaching materials.
Questions to Guide the Arrangement of the Classroom to Support Access for All Children (Sadao and Robinson 2010)

Overall Environment

- Are there any large physical barriers that obstruct movement between learning areas?
- Are the pathways from the entrances to the learning areas and other seat locations wide enough?
- Does each table have room for adapted furniture, seats, and wheelchairs?
- Can a child with visual or motor issues navigate the classroom environment with minimal teacher assistance?
- Does each learning area have picture labels and directions to guide students about what to do in that area?
- Are storage containers labeled so that toys and games can be used and put away easily?

Student Cubbies

- Does each cubby have a student’s picture and name on it?
- Do students have easy access to hooks for clothes and backpacks?
- Does each cubby have a small shelf or additional box to hold the student’s work and journal?

Computer Stations

- Do computer stations accommodate students who need special seating?
- Are there additional cushions and other materials that could be used to adjust a child’s seating position?
- Does the seating arrangement allow for more than one child at a computer station?
- Is there a touch screen that can be used in lieu of a mouse?
- When seating adjustments have been made for a student with motor issues, do all students still have access to the computer(s)?
- Are computer stations situated within view of a teacher?

Small-Group Thematic Areas

- Is there a tray or small plastic pool to provide a confined space for blocks?
- Do some blocks have self-sticking fabric strips for added balance during stacking and building activities?
- Is the art area stocked with a variety of adapted scissors, pencil and paintbrush grips, and colored tape?
- Does each table have laminated written rules and picture cues providing directions to students?

Group Lesson Area

- Is a schedule posted with picture cues?
- Are individual schedules posted for students who need further individualization?
- Are pointers and flashlights available for pointing out and highlighting important information presented during large-group activities?
- Is a rain stick or timer available for providing an auditory cue when transitions occur?
- Is there a defined space for large-group activities identified by a large carpet or carpet squares?
- Are there a variety of props and other instructional materials to actively engage students in large-group learning?
When a child is involved in an activity, the second step is to provide a variety of materials focused on a particular learning concept. For instance, in the story about Mr. Ting's learning areas, offering students several sizes of magnifying glasses that have sponge rollers attached to the grips allows for easier grabbing and maintaining hold on the object. Large pictures of silk worms and their habitat provide another way of representing the concept. The third consideration in UDL is providing each student with different ways of expressing their understanding of a topic. For a child with limited language skills, creating a voice-activated communication device with four audio cued picture choices of the silk worm and other insects offers a way for the child to select the silk worm picture they observed to indicate recognition of the concept. Keeping room arrangement and the potential need for accommodating the learning environment in mind will avoid challenges with accessibility and potential behavioral outbursts later on. Guiding questions highlighted in this section provide a rubric for adapting the learning areas to accommodate all learners.

**Principles of Design**

Before moving furniture and arranging the materials, TK teachers can use several guiding principles to plan spaces. Educators should begin by closely reviewing the fixed features of the indoor space of the classroom. The locations of doors, sinks, built-in cabinets, and large whiteboards will often dictate the plans for organizing the space. The Art Area and Sensory Area should be placed as close as possible to the child-size sinks because of the messy nature of the activities that take place in those areas. Access to the large whiteboard is important for large-group learning experiences. Storage for students' personal items and family communication should be located near the classroom entrance. After the initial placement of learning areas based on fixed features, teachers can define spaces according to the type of play. Active spaces (e.g., Construction Area, Dramatic Play Area) should be grouped together to promote more focused play in other locations of the classroom (Harms, Clifford, and Cryer 2005). Clearly defined and labeled areas communicate expectations for play, contain materials within the area, and create a traffic flow for movement between spaces. The placement of furniture, tables and shelving, as well as visual markers such as signs and carpeting further guide behavior. For example, a medium-size rug placed in front of a shelf of blocks not only offers a soft space to work on the floor, but it also suggests a reasonable work station and the blocks stay on the rug.

Group size is an important factor in the creation of distinct areas for learning (Thompson and Twibell 2009). Thoughtful consideration should be given to the number of students who can participate in a particular space for exploration. While these will be classroom/teacher specific decisions, generally the Language and Literacy Area may be smaller in size than the Dramatic Play Area. The Science and Discovery Area may be similar in size to the Math and Manipulatives Area. Tables used to support area activities as well as small-group learning experiences will also dictate area size. Once initial arrangements have been made, teacher observation will confirm the efficacy of the design or modifications may be needed. Visual systems that communicate appropriate group size to students are also beneficial for managing areas. Examples include picture boards with sticky fabric...
Aesthetics in Quality Learning Environments

An often overlooked area of program planning is the aesthetics and organization of the learning environment. The physical layout facilitates exploration and supports classroom management. The choice of wall displays, furnishings, and organization of materials has an impact on students' learning and behavior (Bakley 2001; Curtis and Carter 2003). Creating a visually pleasing and inviting environment for students and adults is important. Additionally, the placement of familiar objects and images creates a sense of warmth and security for young children.

• Tools for assessing program quality generally examine the physical layout of the classroom and the location and quantity of materials; little attention is given to the organization, grouping, and display of items. The following basic guidelines can help facilitate the creation of a visually pleasing and educationally effective space:

  • Choose neutral colors for tables, chairs, and other furnishings to create a natural palette from which to incorporate learning materials, and highlight important documents and student work (Hohmann and Weikart 2002).

  • Limit the use of color. Too much color and overwhelming displays on walls make it difficult to focus; the eye is drawn to move across the space to the next stimulating exhibit rather than hone in on the informative display. A note of caution, particularly for the beginning of the school year: less is more.

  • Design the classroom walls with carefully selected textures and postings. For example, a quilt or cultural artifact such as a woven rug hung in the Dramatic Play Area offers warmth and a feeling of home. A cork or magnet board in the Construction Area, with copies of blueprints and photos of inspiring real structures, as well as space for “current work” from the students, suggests potential projects and is flexible for changing images over time.

  • Add living things (e.g., plants, flowers, and pets) to enliven the indoor environment.

TK teachers can assess their classroom environment by taking a simple inventory of their space and reflecting on the following questions:

• Are the aesthetics of the environment inviting? Do they welcome the students, families, and teachers?

• Are materials and visuals placed at the students’ eye level?

• Is the environment calming, or would it tend to overstimulate students?

• Is the environment clean and well organized?

• Does the environment reflect the culture, traditions, history, and identity of the children, families, and teachers in the community?

TK educators may face limitations in terms of budget, classroom furnishings, and program materials, but each TK classroom should evolve over time to meet learning goals and emergent themes. The physical layout of the classroom can be modified to support changes in behavior and curriculum as needed. Both short- and long-term plans could be created for the aesthetic design, and TK teachers can solicit donations and integrate new items. Students, families, and educators will find new satisfaction in the space they have co-created; they will find that student learning and engagement justify the time spent on improving program aesthetics.
strips or name sticks with numbered openings so that students will know if there is space available in the learning area.

TK teachers also need to consider the importance of visual access. A clear visual field permits teachers to easily scan the learning environment and select individual students or groups that may benefit from additional support or instruction. Furthermore, educators can observe and assess students’ development as children pursue student-initiated work or engage in structured, teacher-initiated learning experiences. Students will benefit from low shelving and limited visual barriers (Hohmann and Weikart 2002). They should be able to view peers at work and join activities that match their emerging interests and preferences for exploration. Classroom prompts (e.g., posted alphabet, behavioral charts) provide important tools for action or social support and should be easily viewed by and accessible to all students.

**Materials**

Supplying the TK classroom with a variety of rich and engaging materials promotes concrete learning and provides students with experiences that enable them to meet the expectations outlined in the California Preschool Learning Foundations, California’s Common Core State Standards for kindergarten, and Content Standards for California Public Schools (kindergarten). Both open- and close-ended materials serve a purpose in TK students’ learning (Thompson and Twibell 2009). Close-ended materials, such as puzzles, activity boards, and matching games, promote conceptual development through guided learning experiences. Close-ended materials have a specific purpose and outcome; within the structure of the material there is inherently one right answer. Teachers can incorporate close-ended materials into choice time, and they can work these activities into the small-group rotations to promote independent learning. In addition to close-ended materials, students should have access to a large number of open-ended materials. These are materials that focus on the process of discovery and allow students to express their creativity (e.g., textiles, inch blocks, recyclables, and the like). If the room allows, educators could reserve a space for the “work in progress” of various students. This designated space protects students’ work and offers opportunities to revisit and expand on these projects.

TK teachers set the stage for student learning by organizing and displaying materials into conceptual groups. Placing like materials next to each other provides students with important information about the purpose and possible use of the items (Riley et al. 2008). For example, in the Science and Discovery Area, placing the magnifying lenses on the shelf next to a basket of natural materials collected from the outdoor environment invites students to take a closer look. Additionally, teachers can intentionally group items to emphasize learning of specific content standards. In the Math and Manipulatives Area, creating an attractive display of flat tangram pieces and geometric solid shapes and then placing one item in a “mystery box” invites students to describe the defining characteristics of the hidden object and make comparisons with the other shapes on display.

Materials made available for students’ independent use can be clearly labeled. Labels may be created in a variety of formats, but all could include some form of print and an image of the specific material (e.g., picture, clip art, or hand-drawn image). A picture of the material paired with the written word
exposes students to environmental print (Ranweiler 2004), while also allowing students at all levels of reading ability to select materials for use. Labeling materials also supports student participation in caring for the classroom environment as they are able to cleanup activities and return them to the designated space when finished. Furthermore, labeling creates a universally designed classroom that is easily accessible by all learners. To ensure the materials are designed with all learners in mind, refer to "Ideas for Supporting Additional Accommodations for Learning" on the next page.

As mentioned previously, TK teachers can create learning areas throughout the classroom that invite students to explore and engage with the content standards. Where possible, these learning areas can be supplied with real objects that represent the diverse backgrounds and cultures of the classroom family community (e.g., visual art, fabrics, food containers). Meaningful materials

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"Work in Progress, Save for Later"

Some students may not complete their projects within the allotted time for student-initiated work. As a result, these students may become frustrated if their important projects are deconstructed or taken home incomplete. Teachers communicate respect for student work by allowing students to save and return to projects over time. By designating a space for ongoing work, teachers allow students to be thoughtful and intentional in their work, using the spot to “hold work” until time allows additional work and exploration. For example, a student working on an elaborate small block house is able to add greater detail over the duration of the week. The complete project provides a clear illustration of the student’s emerging awareness of symbolic representation and use of narrative to share a story about the design. This information may have been missed had the time for long-term exploration not been extended.

TK teachers may go about creating a “work in progress” station in a variety of ways:

- Set aside space for work in progress at a level easily accessible to the student.
  - Use a small table in a protected area, away from high-traffic zones.
  - Repurpose program furnishings such as cubby units or shelf tops.
  - Provide small trays that are stored in different locations.
- Label designated surfaces with a sign (e.g., “Work in Progress, Save for Later”) to promote community care and respect.
- For limited space or popular materials, take digital photos to serve as a blueprint for use at a later time when a material or activity is made available again.
**Ideas for Supporting Additional Accommodations for Learning**  
(Sadao and Robinson 2010; Isbell and Isbell 2005)

- **Tangram Blocks**: Provide tangrams that have raised lines to further shape distinction through touch; outline with highlighter pen or tape.

- **Pattern Stamps**: Use a sponge roller to cover the stamp handle to make it easier for children to grip and stamp images.

- **Puzzles**: Add wooden doorknob grippers to puzzle pieces.

- **Student Journals**: Provide a picture cue attached to words. Use real pictures of activities. Use a speech-generating device such as talking picture cards or talking photo albums to reinforce a link between picture, word, and sound. Use an electronic tablet drawing application to expose the student to creating pictures by selecting predrawn symbols; use a story sequencing application to add real pictures to a journal story instead of drawing a picture.

- **Homemade Books**: Make baggie books with added Velcro on each baggie page for three-dimensional props to be added.

- **Adapted Books**: Add colored highlighter tape over color words that correspond to the color of the tape and add white correction tape to cover cluttered backgrounds and wordy descriptions.

- **Stabilized Materials**: Use textured shelf liner under toys and games to secure them to tables; use self-sticking fabric strips to fasten items to a table or tray.

In the next section, recommendations are made for supplying learning areas in the TK classroom. This general list is meant to serve as a starting place for program planning, not as an exhaustive list. Initially, TK teachers may not have access to all materials, and they may need to acquire supplies over time. High-quality early learning environments are created through intentional planning, implementation, and evaluation. Program design is a reflective process; the classroom space will evolve over time as the teacher grows in his or her professional knowledge and practice and as students’ needs change. TK teachers are encouraged to use observations of student work and emerging interests as points of inspiration in program planning and in the continuous development of learning areas throughout the school year. Teachers are encouraged to rotate materials in the TK classroom as new areas of focus present themselves in students’ independent and collaborative work.
or group building projects. Ideally, this area should include the following items/materials:

- Wood unit blocks
- Variety of other blocks of varying shapes and sizes (e.g., small unit blocks, large wooden blocks, cardboard brick blocks)
- Materials to extend and support construction play (e.g., plastic people, animals, traffic signs, cars)
- Materials to integrate literacy learning (e.g., books, pencils, clipboards with paper, graph paper)

Promoting a Literacy-Rich Environment

Students are active explorers of their environment; they construct meaning from hands-on learning experiences. To capitalize on students’ innate curiosity, educators can structure classrooms in ways that give students numerous opportunities to explore and engage in literacy experiences (National Research Council 2001). TK teachers can take the following actions to support language and literacy development:

- Prepare a Language and Literacy Area with a variety of writing tools, instruments, and paper (e.g., paper or whiteboard) to encourage students to communicate their ideas and experiences and build competencies in letter and word knowledge.
- Supply all other learning areas with portable writing surfaces (e.g., clipboards), paper, and pencils. The intentional placement of writing materials throughout the classroom eliminates “wait time” and traveling across the classroom to collect materials. It also supports the spontaneity that is inherent in student-initiated learning. A student may want to record a recipe in the Dramatic Play Area or create a sign to label a block creation.
- Display environmental print, such as food containers, signs, and literacy artifacts (e.g., newspapers), in conjunction with learning themes to introduce print concepts and encourage students to stop and practice reading skills (Smith 2001).
- Incorporate books related to learning-area content, such as a book about insects in the Science and Discovery Area, books in the Dramatic Play Area that provide students with scripts for play, and literature in the Construction Area and Art Area that inspires crafting and creating.

By supplying the spaces with opportunities to read and write, teachers encourage student-initiated learning and promote playful encounters with literacy. Adult interactions with students will enhance these spontaneous learning experiences. During students’ choice time, teachers can circulate around the classroom, promoting the incorporation of these resources to expand children’s learning (Epstein 2007). For example, a teacher may sketch a block structure on paper and then invite students to label their blueprint. Program or parent volunteers may provide support in a literacy-rich environment. Encourage volunteers to model reading and writing skills such as demonstrating the use of coupons or writing a grocery list in the Dramatic Play Area food market. Adult presence adds new depth, meaning, and fun to students’ initiated play themes.
The **Reading Area** is intended for individual or small-group exploration of storybooks, as well as rest and reflection. Ideally include the following items/materials:

- Variety of books and magazines related to current theme/topic
- Soft/cozy materials (e.g., carpet, bean bags, pillows)
- Comfortable seating (e.g., child-size couch, rocking chair)

The **Listening Area** is planned to promote independent exploration of book reading and print concepts. Ideally, the following items should be included in this area:

- Audio player
- Multiple sets of headphones with docking stations
- Chairs (which may include beanbag chairs)
- Audiobooks (or books with accompanying recordings)

### Choosing Quality Books

Storybook reading has an important impact on long-term language and literacy development. For young children, book reading provides experience with vocabulary, exposure to the cadences of written language, an introduction to the structure of stories, and opportunities for sustained attention (Justice and Pullen 2003; Wells 2009). Research has also found that children who have access to numerous, high-quality books show competencies in narration, concepts of print, concepts of writing, and letter knowledge (Jalongo 2004). The California Reading Task Force suggests that each classroom have access to a minimum of 1,500 books (CDE 1999) of various types. This recommendation includes books stored in the school library and does not mean that all books have to be displayed in the classroom at the same time. A classroom’s collection of books should include the following types:

- Literature (fiction)
- Informational text (nonfiction)
- Picture books illustrated with drawings, paintings, and photos
- Folk storybooks
- Concept books (e.g., alphabet books, color and shape books, counting books, and so forth)
- Predictable books
- Poetry books
- Riddle and joke books
- Children’s magazines
- Homemade and student-made books
- Photo albums of the students
Choosing Quality Books (continued)

Classroom libraries can include a wide variety of books that reflect the diverse make-up of the classroom and the cultural and ethnic diversity of the school community. This includes:

- Books showing people of all races, ages, and physical abilities
- Books reflecting experiences of single-parent, two-parent, and extended families
- Books in the home language of the students
- Books with female and male main characters

The books made available to students may be rotated throughout the year according to themes and emerging projects. Although a quiet, comfortable space designated for reading is important, books should be displayed throughout the classroom. Provide books that share information and connect and expand on play themes. For example, displaying a book about different types of buildings in the Construction Area may inspire students to build a skyscraper or learn the names of the different machines used to construct such towers. Selecting high-quality books for lesson planning is also important. When choosing narrative texts for shared-book reading, educators can consider the following (Jalongo 2004):

- Characterization: Are the characters memorable and portrayed well?
- Plot: Does the book present a sequence of events that are interesting and understandable to students?
- Settings: Are settings portrayed accurately in informational books and imaginatively in literature books?
- Use of language: Is the language concrete and vivid? Is the language easy to follow?
- Quality of art and design: Do the illustrations capture the reader’s attention?
- Interplay between pictures and words: Do the illustrations enrich the story? Do they move the story forward? Do they enhance the meaning, establish the mood, or clarify information in the story?

It is important to provide informational texts in learning areas and on reading shelves, but it is equally important to expose children to shared reading experiences with informational text. Barbara Moss (2003) suggests looking for the 5 A’s when selecting engaging informational books:

- Authority: The author presents information on the topic with authority
- Accuracy: The author ensures the accuracy of the information
- Attractiveness: The book has “kid appeal”
- Appropriateness: The content is appropriate for the age level
- Artistry: The text is clearly organized, interesting, and written in a way that children can understand and enjoy

(From Exploring the Literature of Fact: Children’s Nonfiction Trade Books in the Elementary Classroom, by Barbara Moss. See References section for further information.)
The Language and Literacy Area supports the development of letter knowledge, fine-motor control, and emergent writing skills. To match all students’ personal writing styles and skills, a wide range of materials is encouraged and needed. Ideally, the following items should be included in the Language and Literacy Area:

- Many types of paper (e.g., construction paper, lined/unlined paper, tracing paper, journals, envelopes)
- Many varieties of writing instruments (e.g., pens, pencils, markers, crayons, colored pencils, chalkboard, whiteboard)
- Word books or cards (in English and the home language(s) of students in the class)
- Letter-making tools (e.g., letter stamps, stickers, and stencils)
- Adaptive writing instruments and writing surfaces
- Picture dictionary, sight word rings, and/or word wall with students’ names and other words relevant to themes and activities
- Manufactured or homemade listening tubes
- Alphabet strips (visual and tactile)
- Literacy games (e.g., alphabet bingo, phoneme match, story sequencing)
- Books with letters, letter sounds, and simple text

The Art Area fosters creative expression, reasoning skills, and integrated learning. It is designed to support student-initiated work as well as teacher-directed experiences. A variety of tools, loose items, and consumables can be made available to students each day. Projects that promote new skills or expose students to different media and cultural works could also be incorporated over time. Ideally, the following items should be included in the Art Area:

- Easel station
- Paper (e.g., construction, textured, plain)
- Paint (e.g., watercolor, tempera, and a variety of paint colors)
- Pencils, markers, crayons, colored pencils, and a variety of crayon colors
- Collage materials
- Scissors, glue, glue sticks, clear tape, colored tape
- Modeling clay and dough
- Sculpting tools
- Recyclables (e.g., toilet paper tubes, strawberry baskets, plastic bottles)
- Miscellaneous project supplies
- Name cards to support writing
- Books about artists from different parts of the world, mixed media, and “how-to” crafts
The Computer Area is dedicated to introducing students to technology through age-appropriate software and adaptive keyboards and instruments. Ideally, the following items should be included in this area:

- Computers with two seats each (to encourage cooperative learning)
- Child-friendly hardware, such as oversized keyboards, colored keyboard keys, a mouse, and touch screens
- Headphones
- Developmentally appropriate educational software and Web sites
- Picture cues for visual instruction of computer use

The Science and Discovery Area is a space designed to encourage students to explore, ask questions, and pursue answers through the inquiry process. Specific investigations can vary over time and incorporate a regular selection of science tools to match emerging topics of study. Ideally, the following items should be included in the Science and Discovery Area:

- Science tools (e.g., magnifying lenses, rulers, color shields, scales, mirrors, tweezers, pipettes, and so forth)
- Activities that change over time (e.g., magnets, insects, seasons, life cycles)
- Living things (e.g., plants and classroom pets)
- Pencils
- Clipboards with paper
- Science concept books

The Math and Manipulatives Area promotes conceptual learning of numbers, shapes, attributes, patterns, and mathematical reasoning. Many of the materials supplied in this learning area also build fine-motor strength. Ideally, the following items should be included in this area:

- A wide variety of math manipulatives (e.g., counting bears, Unifix cubes, pattern links, tangram shapes)
- Number strips
- Math tools (e.g., rulers, sorting tubs or mats, scales)
- Pencils
- Graph paper
- Clipboards with paper
• Collections of objects for counting, sorting, and pattern making (e.g., buttons, seeds, keys, old crayons)
• Puzzles
• Math games (e.g., board games, dice, number bingo)
• Books that focus on math concepts

The **Sensory Area** invites students to pursue experiences that concentrate on developing and engaging the five senses. This can be a messy exploration, so TK teachers may consider placing this area in the outdoor learning environment if possible. Table-top adaptations may also be incorporated to work with limited space. Ideally, the following items should be included in the Sensory Area:

- Modeling clay
- Dry goods (e.g., packing peanuts, natural materials, beads, textiles)
- Sand
- Water
- Spill and fill containers
- Small pieces for dramatic play (e.g., dollhouse furniture, plastic people, small animals)

**Supplying the Space**

TK students are best supported when programs incorporate child-size tables, dramatic play areas, and open-ended manipulatives and construction supplies (e.g., blocks, recyclables). Although some school districts may have funds set aside for initial start-up, others work with limited budgets. Teachers of young children are known for their resourcefulness; they can find uses for discarded furniture and know how to pick out valuable items at garage sales. They also know how to generate community support and donations. The following are additional ideas for supplying the TK classroom:

- Work with school and district administrators to determine additional funding opportunities for the TK program.
- Borrow within the classroom/school community.
- Get assistance to seek and apply for local, regional, and national grants.
- Salvage kindergarten equipment that is no longer in use.
- Post a wish list of materials for parents and families to donate. The list should include free goods (e.g., computers donated from a workplace or recyclables from home) as well as items of different price ranges.
- Create and collect homemade materials and curriculum supplies (e.g., felt stories, modeling clay, old buttons, muffin tins, matching games).
- Make use of professional colleagues’ expertise; visit Web sites that offer free songs and activities.
The Dramatic Play Area is collaborative in nature and should be well stocked to promote positive peer interaction and cooperative learning experiences. Vocabulary development and conceptual knowledge will be promoted by varying the learning themes in this area. Initially, the following items should be included in the Dramatic Play Area:

- Table, chairs, and other furniture (e.g., kitchen set)
- Play food and empty food containers
- Telephone (and a phone book)
- Dress-up clothes (e.g., everyday clothes and fantasy)
- Diversity dolls
- Baskets, woven fabrics, and images from different home experiences
- Variety of props and costumes to rotate over time
- Literacy props and artifacts
- Puppet theatre and puppets
- Pencils, clipboard with paper
- Theme-related books

Space for Families

The home–school partnership contributes significantly to student achievement outcomes (National Coalition for Parent Involvement in Education [NCPIE] 2006). Family involvement

Dramatic Play—Going Beyond the Kitchen

Dramatic play is a valuable component of a student’s educational experience; it is collaborative in nature and presents opportunities for using language and developing everyday math and social-studies skills. Students explore numbers as they set the correct number of plates for dinner, practice reading as they decode the text on an empty food container, and share their knowledge of community helpers as they care for sick babies. Teachers should consider moving beyond a traditional arrangement of the Dramatic Play Area, which typically includes a play kitchen, table and chairs, doll bed, and a storage area for dress-up clothes. Although this design offers many valuable learning experiences, teachers can do much to extend students’ educational play:

- Supply prop boxes with a variety of realia. For example, a veterinary hospital prop box may include doctors’ tool kits, stuffed animals, soft bandages, copies of animal x-rays, patient files, veterinarian scrubs, and appointment books.
- Seek donations from families and community partners to obtain materials that reflect diverse cultures.
- If possible, invite experts to speak to the class about their insights and experiences. These real-world connections may inspire interest in new themes for the dramatic play area.
- Rotate dramatic prop boxes to match current curricular focus.
- Make prop boxes compact to meet classroom storage needs.
is positively associated with peer friendship skills, academic success, school attendance, and motivation to succeed. In this document, the terms families and parents are used interchangeably to refer to the significant caretakers in a student’s life. These terms include but are not limited to biological family relations, adoptive or foster parents, and other individuals who may not be related to the children in their care.

TK teachers can utilize many strategies for establishing and maintaining authentic partnerships with parents—and the program environment may be instrumental in this process (Nagel and Wells 2009). Designating space for families is an important part of program design. A family communication board can be used for postings related to educational routines, school updates, and current curriculum. Information related to volunteer opportunities can be displayed in attractive formats to attract the attention of parents.

**Displaying Student Work**

Students take great pride in their work. Although some students prefer to take important projects home, many enjoy seeing their artwork, writing, or models on display in the classroom. Families, too, relish the opportunity to see tangible evidence of their children’s learning displayed throughout the classroom environment. Children’s positive sense of self is nurtured when they see that important adults, teachers, and families have noticed their efforts. Furthermore, classroom displays of meaningful work create a sense of community, and they are a source of inspiration for future projects. For these reasons, TK teachers should designate functional space for classroom displays, which should be placed at the students’ eye level so that children will have easy access to their work. Permanent displays, those used for a uniform purpose over time (e.g., a Science Area Investigations magnet board), could be combined with portable displays (e.g., moveable picture frames or raised platforms for model display) to promote ease of use and documentation throughout the early learning environment. Magnets on metal cabinets and masking tape for walls invite students to take part in the creation of displays. Documentation of student work could include both student-initiated work as well as items representative of small-group and large-group learning experiences.

It is common for teachers to include every piece of work generated in group activities. However, this can lead to cluttered walls and an emphasis on uniform, product-based work. TK teachers may choose to display work in this fashion or perhaps consider highlighting unique individual work—projects that reveal each student’s unique strengths and interests. Changing displays of work periodically ensures that each student is represented and shows a progression in development over time. Teachers and students may also choose to co-create program displays that draw attention to community learning experiences, such as field trips (e.g., Our Visit to the Post Office) and cooperative projects (e.g., Our Community Garden). It may take time for families to adjust to the new format of a display, but when teachers explain the purpose and send home other important work, families will likely value the investment in reflecting individuality and promoting community efforts.

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**Extending Learning from the Classroom to the Outdoor Environment**

Many activities that originate in the indoor classroom can be extended into the outdoor environment. The programs should emphasize real experiences for students. As an illustration, an activity that explores the changing of seasons might document the change in a neighborhood or play yard tree over time. Active learning in outdoor spaces will engage students differently than experiences constructed and executed in...
Planning for Physical Education

Educators make use of outdoor environments to plan learning experiences that are specifically designed to engage students in gross-motor activities and coordinated movement. Open-ended gross-motor play invites students to practice movement skills, but “some structuring of physical activity is necessary to help children maximize their movement experiences” (Sanders 2002, 31). Organized gross-motor games, such as Red Light, Green Light or Teacher, May I, promote the development of large-motor muscle control, balance, and complex, integrated movement. These combined skills are put to use in a variety of everyday tasks such as moving across a space, jumping and landing, and writing and drawing. It is important for all students to have opportunities to develop and practice specific and varied forms of physical movement. These movement experiences influence the specific gross- and fine-motor skills children will be able to perform as they grow and participate in more organized sports and physical activities. TK teachers have the opportunity to expose students to a variety of movement skills (e.g., galloping, skipping, hopping) and help them build control and competence in the early years.

To plan an effective physical education curriculum, educators need to be knowledgeable about the diverse movement skills and the specific developmental sequence of these skills. Resources such as the California Preschool Learning Foundations, Volume 2 (CDE 2010b), and the California Preschool Curriculum Framework, Volume 2 (CDE 2011), offer clear definitions of different areas of physical development, descriptions of development, and examples of skills in real contexts. Furthermore, the framework provides specific materials and activities that are designed to engage students in active play and promote coordinated action. Additionally, The Intentional Teacher: Choosing the Best Strategies for Young Children’s Learning (Epstein 2007) details both child-initiated and adult-initiated play experiences that facilitate physical development.
the indoor classroom. Teachers are encouraged to reflect on indoor learning experiences and consider whether the activity might be better implemented in an outdoor setting.

Dramatic play is an activity that easily extends to outdoor play. In the school play yard, students can be observed engaging in pretend adventures or recreating plots or themes from media as well as real life. TK teachers can encourage this form of creative expression by providing students with the tools and props to dramatize their stories. Old play kitchen bowls, cups, and utensils invite students to “cook” using natural materials (e.g., grass, leaves, and rocks) from the play yard. Dress-up clothes help students transform into pretend play characters. Just as the indoor dramatic play area can be transformed over time, so too can the outdoor dramatic play props. Camping, firefighter play, and superheroes are all possible extensions.

**Benefiting Hearts and Minds**

As the world becomes increasingly virtual and children’s everyday experiences become infused with technology (e.g., computers, television, cellular phones), real encounters with the natural world become ever more important. Many young children have limited opportunities to engage with their natural world because they live their lives largely indoors (Louv 2005). Some families keep their children inside for safety reasons, while others do not live near green spaces that are natural for play (Rivkin 1995). Given this trend, concerns have been raised in relation to childhood obesity and mental health (Louv 2005). Although children present their symptoms differently, they—like adults—experience stress as a result of the fast-paced world in which they live. Recent attention has been drawn to the positive social–emotional outcomes associated with time spent in outdoor play spaces.

Much of social–emotional development takes place in the contexts of relationships. The open-ended context of outdoor spaces naturally lends itself to promoting authentic connections with peers and adults (Thompson and Thompson 2007) in the following ways:

- As students organize games, partake in dramatic play adventures, and resolve conflicts, they are practicing skills (e.g., negotiation, leadership, collaboration) that will be used throughout their personal and communal life.
- Time spent in natural spaces offers student’s opportunities to slow down, reflect, and simply enjoy the moment. Research has shown that “as little as four minutes in a garden will start to reduce stress, improve mood, and steady the vital signs” (Nature Explore 2011).
- Student-initiated challenges in outdoor environments permit students to push their limits and build self-awareness of their strengths and emerging abilities.
- The natural world evokes students’ sense of wonder. Curiosity and creativity are nurtured as students look under rocks, collect seed pods, and blow apart the blossoms of dandelion weeds.

Spending time in outdoor spaces gives students the opportunity to practice behaviors that nurture relationships and promote kindness and gentleness (Rosenow 2008). TK teachers who attend to these acts of care and comment on the positive impact on others reinforce positive attitudes and nurturing actions.
of students’ interest in role-play experiences. To promote ease of use, prop boxes should be placed near the area where children will play. For example, if preparing a “gas station,” consider setting dramatic play props near the bike path/area.

TK students benefit from regular time and exposure to the open-ended context of the outdoor play yard. Through individual exploration, cooperative play, and collaborative investigation, the outdoor environment promotes the development of self-regulation, a positive sense of self, peer play skills, and focused attention (Thompson and Thompson 2007). Additionally, outdoor spaces are rich in academic learning (Nature Explore 2011) as real science, environmental print, and exposure to shapes and patterns are some of the opportunities present in the school play yard. Programs vary in terms of the physical landscape, natural resources, and outdoor curriculum materials. Although a site might lack traditional “green” space, all programs can enhance students’ learning experiences by making use of the outdoor environment.

The school play yard has traditionally been used by educators to give students an opportunity for unstructured activity. Recess is a time for connecting with peers, climbing on equipment that promotes the development of gross-motor skills, and participating in student-organized games. Young children need to engage in active play. Adults may view this type of play as off-task for educational settings, but research speaks to the significance of such integrated movement in a child’s development. Physical activity provides students with important health benefits, but it has also been associated with positive outcomes in social skills and learning (CDE 2013b). Students who regularly participate in active movement are alert and ready to learn. Although it is important for teachers to plan and implement structured physical movement aimed at refining gross-motor muscle control, balance, and eye–hand coordination (see the highlight on planning for physical education on the next page), research also highlights the value of student-initiated movement and opportunities for unstructured gross-motor play.

Outdoor areas are sometimes more difficult to modify in order for all children to experience play. Using UDL to explore whether changes to the outdoor environment can be implemented may help adjust access to areas typically not available to children with motor and other developmental delays. For instance, simply adding blocks to pedals on tricycles with self-sticking fabric straps attached may allow a child with ambulatory issues a chance to ride a bike. A wagon is another possible alternative to bike riding, offering a child who is unable to pull the vehicle the opportunity to participate as a passenger. Sometimes, slides and swings are located in an area that creates barriers for wheelchairs and children who are unable to manage stairs. A potential solution might be to take pictures of the outdoor areas (such as the slides) and create a visual scene of the place. A child in a wheelchair is then equipped with a voice output device that says “Go!”
to make a request for children to go down the slide. Children then slide, one at a time, upon hearing the command. The child may not be on the slide but is participating in the activity by calling out the directions and pointing to the visual scene depiction of the event. The visual scene helps spark interest in the activity, especially when children see themselves in the picture.

Outdoor play offers children with disabilities an opportunity to interact with other students in a safe and fun learning atmosphere. Outdoor play is an appropriate time to work on following directions and transitioning from one activity to the next when following typical daily routines pose challenges for some students. The unstructured nature of outdoor play enhances students’ positive peer interactions and freedom to express themselves around events they enjoy.

**Supplying the Space**

Much like the TK classroom, the outdoor environment can include spaces for focused learning. There are portable, flexible options for incorporating structured encounters into daily outdoor learning. For example, rather than a stationary Writing Area, TK teachers can create transportable writing bags or writing suitcases. A tote bag or small suitcase supplied with a notepad, pencil box, and alphabet/word cards invites students to document their ideas, write a letter to a family member, or simply sketch an image.

Experiences from the Science and Discovery Area can also be easily introduced into the outdoor space. The outdoor classroom is naturally inclusive of real science explorations. To go beyond casual observations, students need science tools to focus and quantify their observations (Twibell and Harkins, forthcoming). Simple activities such as taking a closer look at a crawling insect or examining a pod from a towering tree encourage students to practice the inquiry skills used by scientists. Additional ideas for practice may be

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**How to Make an Outdoor Science Kit**

Promote the development of inquiry skills by providing students with readily accessible science kits during outdoor curriculum time, recess, and field work experiences. Introduce the kits during a large-group meeting to highlight vocabulary and use. Provide opportunities for students to practice immediately after the group meeting to reinforce conceptual learning.

**Materials Needed**

- Plastic tote or pail, labeled “Science Kit”
- Magnifying lens
- Tweezers
- Ruler
- Empty plastic containers (e.g., petri dishes, film canisters, bug jars, small sorting bins)
- Clipboards with paper
- Writing instruments (e.g., gently used pencils, pens, crayons from indoor classroom)
- Specific learning-theme items (e.g., bug net, mirror, envelopes for collecting pods)
reviewed in the *California Preschool Learning Foundations, Volume 3* (CDE 2013b), and the *California Preschool Curriculum Framework, Volume 3* (CDE 2013a).

**Planting a Seed for Change**

Educational settings can promote children's active engagement with nature. Not all programs have expansive lawns or established trees, so programs with those types of limitations need to embrace creative, collaborative thinking as well as short- and long-term planning. Long-term planning could involve partnering with local, regional, and national organizations aimed at improving outdoor spaces for children. For example, the National Arbor Day Foundation collaborates on the Dimensions Project, a nationwide initiative to build Nature Explore Classrooms for early childhood programs and elementary school settings. Short-term solutions may also engage community partners, but they are often quick in planning and simple in execution. For example, a short-term activity may be the planting of a small tree in the ground or in a wooden barrel that has wheels for portability. Small garden beds or boxes can house plants or simple produce to promote health education and food science. Programs with limited funds can still plan nature explorations, no matter how insignificant those experiences may appear to be. Examples include bird watching, tracking a squirrel as it searches for food, or scouting for ants. These activities, and others like them, have value and promote real connections with the natural world.

**Summary**

High-quality learning environments include outdoor settings where students are actively engaged. Tools that assess program quality may offer guidance and standardized descriptors of high-quality learning environments. Some tools evaluate physical space, others examine teacher–student interactions and instructional strategies, and additional tools assess both environment and educational interactions. Although TK teachers are not required to assess their program design and practices, doing so may lead to a deeper understanding of best practices and offer insights into program strengths and opportunities for improvement (Sugarman 2011).

The TK classroom should be supplied with a variety of materials that are rotated over time. With a number of learning areas and materials, a designated area for storage should be identified for these resources. Creative solutions range from consolidated legal boxes to attractive baskets on top of permanent cabinets. Easy access ensures efficient program preparation and supports emergent learning.

A well-designed TK environment that offers structured choice and extends learning to outdoor spaces does much to invite and engage students in the learning process. Integrated learning opportunities further extend conceptual learning and promote real uses of reading and writing. Through careful observation and thoughtful reflection, teachers plan learning experiences that match current student inquiry and curricular goals.