

OUTDOOR SETTINGS FOR PLAYING AND LEARNING: DESIGNING SCHOOL GROUNDS TO MEET THE NEEDS OF THE WHOLE CHILD AND WHOLE CURRICULUM

by Robin C. Moore

Robin Moore writes as a champion of the comprehensive development of school landscapes for the sake of active learning and free play. "The more hours that children spend at school, the more choices the environment must offer them," he writes. This article presents a selective list of imaginative design options for optimal outdoor learning as well as intimate contact with nature leading to the understanding of earth stewardship from a very young age.

School grounds are one side of the indoor-outdoor learning equation that Maria Montessori understood so well. In the majority of North American schools, including many Montessori schools, the equation is unbalanced. Far more attention is typically given to the interior learning environment than to the exterior. This in spite of the obvious fact that outdoors is where the diversity of the natural world is presented in all its sensory glory. Nature beckons the child's innate curiosity and offers many learning opportunities that are impractical indoors. Through the daily rhythm of playful engagement, children assimilate the lessons of life into their inner being.

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If the outdoor environment is sufficiently diverse, children and teachers can together ride the wave of motivation that comes through play to build an understanding that all humans are dependent on planet Earth. School grounds present all members of the school community with the opportunity to take responsibility for a small fragment of the biosphere, to help keep it healthy, and to heal those parts that have been spoiled. It is an interdisciplinary endeavor that draws on practical and intellectual skills in all subject areas. It invites children at all skill levels to take part in meeting the challenge of creating a sustainable environment for the future of humankind.



A diverse, natural area provides endless possibilities for learning activities in all subject areas.

The purpose in these pages is to present some of the ways that environmental design can help. Outdoor areas can be designed to accommodate a wide range of developmental needs, especially those that are not well matched to the more rigid character of indoor spaces. The more diverse the environment, the broader the range of curricular options available to the teacher, and the more likely that the full range of the developmental needs of the children can be covered. Increased diversity also, of course, provides increased play options for children—enabling playing and learning to be more closely linked.

Another good reason to re-evaluate the learning potential of the outdoor spaces of the school site is the trend towards all-day care in a growing number of schools across the country. The more hours that children spend at school, the more choices the environment must offer them for healthy recreation and leisure. A caring community will ensure a restful contrast to the academic part of the day.

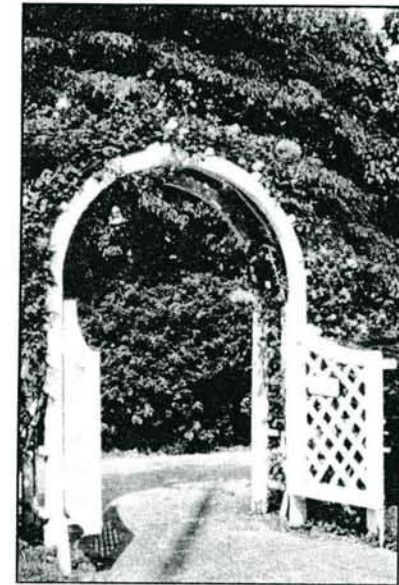


A seamless spatial flow from indoors to outdoors.

The following descriptions of school site settings provide a general guide for teachers, designers, and community groups as they begin planning a new environment or upgrading an existing one. More detailed design guidance is available elsewhere.¹

1. Entrances

Entrances should welcome visitors to the site and reinforce the sense of arrival and departure. They should express or symbolize the educational, social, and cultural mission of the school. Entrances should be designed as gathering places and information points,



A welcoming, friendly entrance.

¹For more technical details of the seventeen types of settings, refer to the following works: *Play for All Guidelines: Planning Design and Management of Outdoor Play Settings for All Children* (1988) by Moore, Goltsman, and Iacofano, and the CD ROM *Play for All: Images and Ideas for Outdoor Play Environments* (1995), both published by MIG Communications, 1802 Fifth Street, Berkeley, CA 94710, (510) 845-0953. Although not oriented specifically towards the design of educational environments, much of the material is directly applicable to school site development.

with ample space for socializing. They should also serve as the transition zone between pick-up/drop-off zones and play areas. They must be fully accessible to people of all abilities.

A variety of sensory cues can be provided to help orient and guide visitors. Cues can be visual (e.g., barrier posts, paving patterns, landmark towers, flagpoles, screen walls), tactile (e.g., paving surfaces, tactile maps, signs), acoustic (e.g., wind chimes, the sound of children playing, songbirds), and olfactory (e.g., fragrant plants).

2. Pathways

From the entrance area, primary pathways should provide direct pedestrian routes to centers of activity, important landmarks, and facilities such as toilets, drinking fountains, telephones, and meeting rooms. As part of this network, signage must provide clear directions and related information that can be easily read and understood by people of all ages and abilities.

Secondary pathways should provide less direct routes and become part of the play setting itself, such as for hiding-and-chasing games. These paths can take many forms. They are places where users can interact with the natural landscape. They can serve as vehicles for exploration and environmental education. Here, children can make discoveries at their own pace.



A gently curving pathway that encourages exploration.

Hard-surfaced pathways can be designed for children's use of wheeled toys, tricycles, or pull carts—all common preschool activities.

3. Signage and Displays

As an adjunct to pathways, signage can communicate a variety of practical information and assist visitors with wayfinding. Signs must provide a comprehensive system that meets strict functional requirements for accessibility and wayfinding. They can also enhance the atmosphere of exploration. The design, typographic style, and materials used should blend harmoniously with the surroundings while meeting functional legibility requirements.

In outdoor play and educational environments, there are several types of information that need to be displayed:

Directional signs should be located at all entry and decision points. They should present information indicating the direction to a space or facility, a change in route, or confirmation of a correct route.

Informational signs should be placed at all entry points. They should present general information about the facility and permanent features of the site.

Identification signs should present information in both words and pictographs about specific features or facilities.

Regulatory signs should present notification of rules, requirements, warnings, and restrictions. They should be used for traffic delineation and control.

Bulletin boards should be used to display day-to-day information about educational programs and school community events. Too often, bulletin boards are not designed large enough and are insufficient in number.

Expressive displays can be used on both vertical and ground surfaces. Three-dimensional structures, overhead spaces, utility poles,

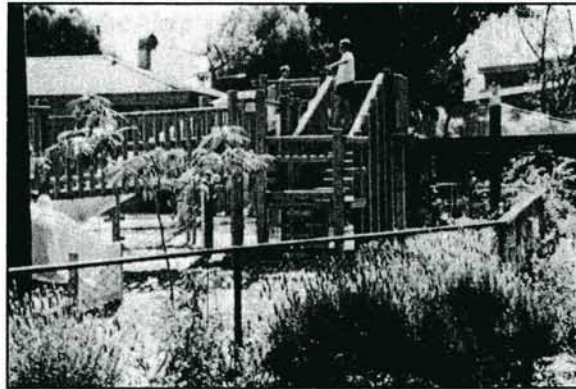
skywires, and roof lines can be used to suspend all manner of artwork generated by educational programs or special events. Physical supports for these possibilities should be designed into the site from the beginning.

4. Fences, Enclosures, and Barriers

Fences and enclosures help delineate pathways, enclose activity areas, and define social settings. They also protect vegetation and other fragile environments by directing the flow of pedestrian movement. In urban areas, particularly those with high volumes of vehicular traffic, fences and enclosures help ensure safety and security for children at play.

Fences and enclosures should reflect the physical structure of the site and the patterns of activity within. Fences can be doubled back on themselves to provide small outdoor classroom settings. Low walls can help define different activity zones as well as become part of the play setting and provide informal seating. Vegetation can be an effective enclosure, defining the boundaries of the play settings, screening them from adjacent areas.

Fences and enclosures also play an important role in defining interfaces between natural habitats and more structured play areas. Visual access to natural areas should be maintained, but fragile environments must be protected from visually discordant intrusions. Fence designs should protect natural areas without compromising visual quality.



Fences to direct traffic flow and to protect fragile plantings.

5. Manufactured Equipment and Play Structures

The primary function of most manufactured play equipment is to support gross motor development. Carefully selected age-appropriate structures can also help foster creativity and cooperation among children. Even in the most diversified play environments, equipment settings attract a high density of use. Typical pieces include balance beams, climbers, multilevel structures, net structures, overhead runways, rocking equipment, slides, spinning equipment, swings, and upper-body equipment.

Play structures attract children because they offer physical challenges and opportunities for risk-taking. Well-designed play structures should provide these challenges without posing safety hazards. Children should be able to climb above the general ground level without exposing themselves to a dangerous fall. In the United States, strict safety standards for play equipment and surfacing have been established by both the Consumer Product Safety Commission (CPSC) and the American Society for Testing and Materials (ASTM). Standards have also been set by organizations and government agencies in Canada, the United Kingdom, Australia, New Zealand, and Germany. A European standard is under consideration.

Play equipment should be selected and sited as part of a comprehensive, multipurpose play environment. By selecting equipment that promotes different types of play activity for different age groups, designers can create a diverse gross-motor setting that allows children to choose the activities they enjoy and to seek appropriate challenges. Most manufactured equipment is available in modular form, offering many configurations to support a wide range of play activities for various age groups. All types of play activity that can be accommodated by fixed structures must be considered, such as large-group play, active play, solitary play, quiet play, and dramatic play.

A variety of items can be added to extend a structure's role as a stimulus for play activities. Manufacturers now offer items such as compasses, clocks, tick-tack-toe boards, telescopes, and binoculars. Such elements can boost children's interest in the play structure, stimulating a wider range of dramatic play, thereby increasing the



Integration of play equipment into the natural landscape; here, a slide/steps combination makes use of a change in level.

programming potential of the setting. Combining manufactured equipment with natural settings or with opportunities for sand and water play can also enrich the play repertoire.

In addition to providing physical challenges, manufactured play equipment should promote opportunities for dramatic play and social interaction. A crucial function of children's play is socialization, which involves processes such as communication, negotiation, and cooperation. Play environments should include semi-private spaces where children can socialize without interruption or distraction by nearby activities. Several manufacturers offer modular elements that can be added to play structures to stimulate this type of play.

Permanent structures are needed in play areas to support dramatic play. As much as possible, these structures should exhibit a strong visual identity and enough complexity to maintain children's interest for long periods of time. Diversity can often be increased by combining play structures with indigenous materials and artifacts.

A long-standing debate has focused on the value of thematic compared to more abstract structures. Critics argue that thematic structures limit children's imagination. In reality, though, this does not appear to happen, especially for younger children, as long as the

thematic structure is complex enough to stimulate a wide range of dramatic play scenarios.

Play equipment can also be created on-site using simple materials and imagination, though safety guidelines must still be followed. In today's society, children increasingly lack opportunities to shape their environment. Such activities are critical for children's mental health and self-esteem. They are especially critical for children from very restricted or chaotic home situations where they have no control over their environment. Open-ended structures provide an excellent way for children to shape their environment. By positioning wooden posts at the corners of a raised platform, for example, children can add materials to create forts, houses, and other structures. When not being used for structure-building, the posts and platform can function as a miniature stage or as a meeting place for small groups.

6. Multipurpose Game Settings

Multipurpose game settings support informal games and ballplay activity. Because they are large, flat spaces, trade-offs between these settings and other types of space-demanding settings have to be made in the site design.



Small lawn areas provide a multipurpose space for many games and free-form activities; here, a "camping trip."

To save ground space, ballplay and game settings can be designed as purely informal settings. In this form, they take less space and can be more flexibly programmed. Observations of such settings have revealed children's capacity for adapting traditional games to the characteristics of the setting (e.g., three-dimensional ball tag on a play structure). Size constraints oblige children to exercise ingenuity and creativity. From this point of view, such spaces may even be preferred.

7. Groundcovers and Safety Surfaces

The surfacing of each part of the play environment must respond to the needs of the intended activities and user groups. Considerations include durability, toxicity, allergenicity, slip-resistance, all-weather use, climatic zone, habitat value, maintenance, aesthetics, erosion control, accessibility, play value, and required shock absorbency. Both soft and hard play surfaces are needed to support different types of educational play activity.

A primary consideration is the safety surfacing located under and around play equipment and elevated structures. Since the majority of outdoor play injuries are caused by falls from equipment, much attention has focused recently on the development of synthetic safety surfaces. Although expensive and often antiseptic in appearance, they provide excellent protection. With a little ingenuity, synthetic safety surfacing can be designed to enhance safety without detracting from the play area's aesthetic and play value. Checkered patterns, for example, are guaranteed to stimulate skipping, hopping, balancing, and jumping games.

If synthetic surfaces are economically unfeasible, sand may be used to provide fall absorbency (although additional maintenance and accessibility issues must be addressed). Or if a more naturalistic appearance is desired, common woodchips and processed wood fiber products are a possible alternative.

School grounds present all members of the school community with the opportunity to take responsibility for a small fragment of the biosphere, to help keep it healthy, and to heal those parts that have been spoiled.

Away from equipment settings, natural groundcovers are recommended because they provide habitats for small animals and microorganisms, close to children. Options include unmown, rough areas of wild grasses and plants, naturalized dirt areas interspersed with informal plantings of indigenous species, and carefully managed, high-quality lawns suitable for group activities.

Meadow habitats provide an excellent medium for exploration, play, and education if allowed to grow "wild" as part of a natural ecosystem. Children of all ages enjoy walking, exploring, and sitting in tall grasses observing wildlife. Meadow habitats must be carefully managed to maintain species diversity and to minimize human impact.

Groundcovers are also required for erosion control. When possible, species with play value as well as erosion mitigation properties should be selected.

8. Landforms and Topography

Natural landforms and people-made changes in level add an interest to a site and stimulate a variety of play activities, such as rolling, crawling, sliding, balancing, and jumping—activities that stimulate the vestibular sense. Topographic variety encourages fantasy play, orientation skills, and hide-and-seek games. All children enjoy getting up high and looking out over the surroundings. Low mounds can be made accessible to all children.

Landforms are fundamental to the terrestrial environment. They stimulate learning about relationships between land and sunlight, vegetation, and water—including erosion and soil conservation. Landforms increase diversity and extend the potential for interdisciplinary work with language, math, social studies, and the arts.

Gently graded berms can be combined with manufactured and site-built play equipment to improve accessibility. Integration of landforms and fixed structures can enhance play value and protect the site against erosion—for example, by using retaining walls, recycled tires, rocks, and plant materials on steep slopes.

Older children need challenging, exciting places to ride bicycles. Most neighborhood streets are no longer available because of traffic hazards. Modest topography in woodland settings is ideal because of the low environmental impact and flexibility of use.

Woodland zones, a common feature in Swedish playparks, also allow children to engage in other types of adventure activities, including camp building, exploration, and ranging games.

9. Trees and Vegetation

Plants are intrinsically interesting to children. Individually, collectively, or in combination with built features, plants can greatly extend the range of play activity. Together with soil, sand, and water, plants provide manipulative settings that offer a welcome contrast to the static character of fixed play structures. Climbable trees are especially important. Plants are a major source of play props, including leaves, flowers, fruit, nuts, seeds, and small sticks.

Renewed interest in the therapeutic and medicinal properties of plants lends further weight to the importance of their integration into children's environments. Plants stimulate all of the senses and add a positive ambiance to play settings through their mix of shade, color, fragrance, texture, and enclosure. Plant-enclosed "refuges" become



Vegetation provides loose parts for curricular work.

favorite places to escape, to relax, and to socialize in small groups. Shrubs are used to create intimate spaces where children can interact with the natural environment and with one another.

Vegetation stimulates exploration and discovery, fantasy and imagination, and provides an ideal setting for dramatic play, hide-and-seek games, and orienteering activities. Specimen plants provide important orienting elements. Vegetation is the ultimate interactive playing and learning environment—and is virtually cost-free once established.

Trees and vegetation give greater spatial and textural variation to educational settings. Indoor-outdoor transitions can be softened with vegetation—especially for people whose eyes adjust slowly to changing light levels. Plantings placed along paths create a complex sequence of texture, smell, light, shade, and color. Trees add a positive ambiance to play settings through light modification, color, texture, fragrance, and softness of enclosure—sensory stimuli that both adults and children appreciate.

Tree climbing is universally popular among children. It stimulates and reinforces a sense of connection to the natural world and the history of human culture. Unfortunately, many children living in cities do not have access to trees that are suitable for climbing. However, all climatic zones have tree species that can support climbing, either in their natural state or as the result of pruning. Low-slung, thick branches are critical to a tree's climbability. Branches only a few feet (one meter) off the ground provide a challenge for young children, while higher branches offer challenges for older and more adventuresome children. A climbable tree should have suitable safety surfacing around its base to protect children from injury if they fall.

Plants have substantial interdisciplinary educational value because of their multisensory qualities. Vegetation marks the passing of the seasons and provides a sense of time in the child's environment. Vegetated settings serve as outdoor classrooms for the study of botany, biology, natural history, geology, chemistry, physics, meteorology, and numerous other subjects. Because children eagerly partici-

pate in activities related to the natural environment, these settings also support activities across the curriculum, from language arts to mathematics.

Planting designs should emphasize the integration of plants into educational settings, rather than creating segregated "nature areas." Children do not structure the environment in this artificial way and are more stimulated by a mix of natural and synthetic elements.

Plants are important for erosion control on play sites. Broad-leaved deciduous trees can reduce the direct impact of heavy rain and extend the runoff period. Surface root systems bind the soil and help it resist erosion.

10. Gardening Settings

Gardening is one of the easiest and most popular interdisciplinary educational activities. A basic vegetable and flower garden for schools and non-formal community education programs should contain several components: beds at different heights to accommodate children of different ages and abilities, low-rise beds for small children who like to kneel or work in a prone position, waist-high beds for older children and children who use wheelchairs.

Beds can be made from treated lumber or masonry. A wide ledge around a raised bed is useful for resting tools and other gardening paraphernalia. A worktable near the planting beds is essential for demonstrating gardening techniques and for preparatory work.

Depending on the location of the school, it is sometimes a good idea to surround vegetable gardens with a high fence to protect them from damage by outsiders. Low-rise beds can be placed against the fence for climbing plants (beans, tomatoes, etc.). Circulation space should be generous to accommodate classroom groups and provide sufficient space for wheelchair users. Straw or woodchips provide adequate surfacing.



Garden math.

A potting shed or greenhouse space should be provided to store tools and to grow seedlings for transplanting. Any small, lockable structure with a sunny window can serve this purpose (a translucent roof is unnecessary and often difficult to maintain).

A composting facility is an essential garden feature to reinforce the principles of recycling and regeneration. A variety of designs are available.

The final ingredient for success in gardening is staff. Teachers, play leaders, or other professionals are essential to ensure proper management and to maximize learning opportunities. Gardens stimulate social interaction, fine motor skill development, and the fine honing of sensory awareness—as well as teaching about nutrition, life cycles, and many other phenomena commonplace in living systems.

Gardens offer immediate educational potential, especially for new teachers who may feel insecure using more elaborate settings, imagining that they may require more background knowledge for instruction. Gardens enable children to interact with nature, to learn about the ecological cycle. By cooperating with each other, peers achieve almost immediate visible results from their own hard work.

11. Animal Habitats

Animals are an endless source of child wonder. They foster a caring attitude and a sense of responsibility. When children interact with animals and talk to them, they invest in them emotionally. Animals can also have a powerful therapeutic effect on individual children and offer many opportunities for interdisciplinary learning.

Educationally, animals stimulate in children a caring and responsible attitude towards living things. Animals are a powerful socialization medium. They provide companionship in nonthreatening ways and almost always come back for more contact. This can be critical for children with limited self-esteem. Caring for animals can produce a strong sense of personal competence and pride.

Through careful selection of plant species (especially those with flowers producing nectar or bearing fruits, cones, and seeds), many types of animals can be drawn into a play environment. Vegetation and natural features such as ponds provide essential food and shelter. Particular species can be selected to attract birds and butterflies. In educational environments, consideration should be given to several categories of animals:



Children are fascinated by wildlife—the curricular potential is vast.

Non-harmful insects and insect-like organisms. Many of us think of wildlife as consisting of large, exotic creatures. Smaller, more prolific animals, however, are just as wild and are much easier to design for in play settings. They stimulate children's exploration of nature and provide many opportunities for interdisciplinary environmental education. Insects will move into any vegetated setting. They add a critical element of life to the playing and learning environment, and they require very little maintenance. The vast majority of insects are beneficial to the human race and do not bite, eat valuable plant materials, or spread disease. Small, indigenous species provide fascinating, close-up nature lessons. Caterpillars, butterflies, moths, ladybugs, beetles, pillbugs, spiders, millipedes, and snails are particularly attractive specimens.

Specific types of plants can be used to attract birds and butterflies. Each butterfly species in larval form generally lives on specific types of plant or even one or two specific species. In adult form, most butterflies have equally specific preferences for nectar plants.

Birdlife. It is difficult for children to make close contact with birds (unless caged); nonetheless, birds add sensory dimensions of movement, color, and sound to play settings. Specific habitat requirements include high places for nesting, sources of nesting materials, and food-producing plants. To be able to observe birds more closely, bird-watching hides can be designed.

Small animals, amphibians, and reptiles. Salamanders, tortoises, squirrels, toads, mice, moles, snakes, and lizards are typical species. Each is adapted to specific conditions that may be replicated through design.

Pond life. Fish, frogs, and other pond organisms are very attractive to children (see Aquatic Settings below).

Domesticated and farmyard animals. Farmyard animals can be incorporated into play environments if there are trained staff or volunteers responsible for their care (although children can do much of the work). Possible animals include donkeys, ponies, sheep, pigs, goats,

rabbits, chickens, geese, ducks, guinea pigs, and hamsters. European urban farms and adventure playgrounds accommodate these types of animals. Rabbits are a fantastic educational resource and extremely popular with children. Rabbit hutches are an easy and relatively inexpensive way to introduce animals into children's play settings.

12. Aquatic Settings

Aquatic systems are critical to the health of humans and our habitat. For this reason alone, they have a substantial educational potential. Aquatic settings range from dew-covered leaves to ponds, streams, and marshes. They support a variety of terrestrial and aquatic life that fascinate children. They have a strong perceptual impact and are vividly remembered in adult years. In other words, educational activities with water have a high level of retention by the student. Water both excites and relaxes.

Water settings are highly valued by children for their rich and varied sounds, textures, reflections, changes in state and feelings of wetness. Like vegetation, water is highly interactive; it can be splashed, poured, dammed, and used to float objects. By mixing water with sand, dirt, and vegetation, children have a broad palette of materials for creating their own imaginary world. Water adds a substantial aesthetic dimension to any educational or recreational setting.



A classic water play setting.

Water settings are a primary attraction, promoting social interaction and cooperative play. They can be designed to encourage children to work together to maximize play value.

Some of the most successful water settings replicate natural environments. Designers of these settings use soil, rocks, and vegetation—in addition to concrete and other building materials—to create streams, cascades, and ponds. Children spend hours in these settings, drawing on the available natural materials and experimenting with the water's movement.

13. Sand and Dirt Settings

The younger the children are, the more attracted they are to dirt play. Using "props" such as a few twigs, a small plastic toy, or a couple of stones, children create imaginary worlds in the dirt—around the roots of a tree, for example. When playing with dirt, children are interacting directly with the surface of the planet. Like water, dirt (soil by another name) is critical to planetary and human life, and therefore commands high educational significance. Hands-on comparisons between good quality, fertile soil, various qualities of dirt, and sand is one place to start.

Sand is a refined and sanitized version of dirt and works best if the setting retains similar qualities, including intimate, small-group spaces,



Play house nestled under a tree, among the flowers, overlooking a sand play setting (many elements can be combined through careful design, especially when space is restricted).

play surfaces, and access to water and small play props. Sand is an excellent educational medium for stimulating creative play and social interaction. It is easy to move and mold. It can be dug, sifted, sculpted, poured, and drawn upon. In large sand areas, children can engage in expansive sand play and create imaginary landscapes using all manner of found objects.

Because of its softness and malleability, sand is one of the most popular play materials. When combined with water, it provides more opportunities for creative and imaginative play. When properly installed and maintained, sand is also an acceptable safety surface under play equipment.

Think of the sand area of a playground as a beach—deep, wide, and near water. For hygienic reasons, the sand area should be at least four feet (1.2 meters) deep with good drainage below and no permanent covering as this will make it go rancid. Rain, air, and sunshine will help keep it clean. If the sand area is exposed to falling leaves or to cats and dogs during the night, a fine-mesh or canvas cover can be used as temporary protection.

Besides providing convenient access to water, faucets can be playful design elements. Hoses and buckets can also be used to draw water from a nearby source. More elaborate designs such as recirculating streams or hand pumps can incorporate water and sand play into the larger landscape.

To ensure accessibility, sand areas should be located near paths and should have ramped approaches so that children and caregivers using wheelchairs can enter easily and safely. A transfer bar or raised sand surface can help people transfer out of their wheelchairs and into the sand.

14. Play Props

Play props help children manipulate the environment and transform it into their own imaginary world. They provide a low-cost strategy for enhancing any play environment. There are several categories of play props.



Children can construct their own play props, make their own inventions, from the natural surroundings, as many cultures still do today.

The most common are small found objects, which may be natural or synthetic, including insects, bottle caps, Popsicle sticks, leaves, twigs, rocks, dirt, and sand.

Plant parts are also part of this category. They are widely available and highly valuable play props. Children can transform virtually any natural object into a prop. Plant materials can also be powerful props for enhancing educational programs and teaching practical concepts and skills through craftwork. All natural educational settings should be designed to be manipulated in this way so that play and learning values can be maximized.



Features of the natural landscape (in this case, two small rocks) provide a whole world of imagination through children's play.

The range of props can be extended by adding objects such as logs, rocks, pieces of lumber, lengths of textile, sections of plastic pipe,

pieces of rope, sheets of heavy cardboard, as well as manufactured modular blocks and similar construction materials. Dramatic play can be enhanced using dress-up clothes. By using these larger-scale props, spaces can be transformed into temporary educational settings for special programs. Closest to this concept is the adventure playground—the non-formal educational setting that was founded in Copenhagen in 1943 (Brett, Moore, & Provenzo, 1993).

15. Gathering, Meeting, and Work Settings

Social interaction is basic to playing and learning. Well-designed seating and gathering areas provide settings in which children can broaden and strengthen their social relationships with each other and with the adults around them. On educational sites, small, comfortable gathering places are required where students and teachers can meet and work together. Forms include benches, decks, patios, verandas, gazebos, and sitting circles.

Gathering settings should be provided to accommodate groups of different sizes. Intimate settings invite children to sit and socialize in small groups while larger settings enable children and teachers to work on group projects. Through careful design and location, gathering areas can provide sheltered or enclosed places where children can play quietly or withdraw from the noise and distractions of more boisterous activities.



Simple gathering area made from slices of tree trunk—a place for a quiet read.

The design of seating and gathering areas can add playfulness to an educational site, creating an inviting, whimsical atmosphere. Unusual forms offer strong identity that invites people of all ages to sit, talk, and linger. They may also function as display settings where children's work can be exhibited.

16. Performance Settings

Performance settings encourage classroom groups to make presentations in public that would not otherwise occur. They stimulate presentation of self, encourage teamwork, and foster a sense of community. They are places where local culture is created. Forms include campfire circles, stages and arenas, and small amphitheatres. When not used for performance, they can be used as gathering, meeting, and activity stations where students can work on large group projects.

17. Field Station and Storage Settings

When educational programs move out of the classroom to the school grounds, an immediate need is for some type of field station to function as a program and communications base. It must also serve as an emergency or first-aid post, storage, and toilet location. The relatively high cost of such buildings makes them difficult to justify, although in Europe they have for many years been a traditional



Small performance space set into the side of a grassy slope. The stage can also double as a multipurpose activity station.

element in playparks and adventure playgrounds. In new or redeveloped school buildings, field facilities should be provided to serve these purposes. An empty classroom can serve this purpose.

Storage is often underprovided in the design of educational settings, yet it makes a critical difference to the viability of hands-on educational programs that use movable equipment and props. Provision of sufficient storage space helps to reduce clutter that can limit educational activity. Accessible storage areas that are clearly defined, labeled, and properly placed will encourage children to clean up after themselves.

REFERENCE

Brett, A., Moore, R., & Provenzo, E. (1993). *The complete playground book*. Syracuse, NY: Syracuse University Press.

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