INTERNATIONAL SCHOOL GROUNDS MONTH

ACTIVITY GUIDE | 2016

INTERNATIONAL SCHOOL GROUNDS ALLIANCE
internationalschoolgrounds.org

The INTERNATIONAL SCHOOL GROUNDS ALLIANCE (ISGA) is a global network of organizations and professionals working to enrich children's learning and play by improving the way school grounds are designed and used. The *2016 International School Grounds Month Activity Guide* is published by the ISGA in honor of our annual celebration of International School Grounds Month in May. Each year we update the *Activity Guide*'s content and add new ideas. The *Activity Guide* is available free of charge on our website:

www.internationalschoolgrounds.org

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The ISGA greatly appreciates the collaboration of 37 author-organizations from 17 countries and extends our sincere and heartfelt thanks! Please see page 63 for a directory of contributing organizations.

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1. Danks, Sharon Gamson. *Asphalt to Ecosystems: Design Ideas for Schoolyard Transformation*. Oakland, CA: New Village Press, November 2010.
2. ---. "The Green Schoolyard Movement." *The New Nature Movement: Guest Columns,* Children & Nature Network, February 6, 2014.
3. ---, editor. *2016 Living Schoolyard Activity Guide - California Edition*. Berkeley, CA: Green Schoolyards America, April 2016.

ISGA's International School Grounds Month - Working Group Members:

DC School Garden Program, USA (2015-2016)
Green Schoolyards America, USA (2013-2016)
Play Learning Life, England, UK (2013-2016)
Children in Nature Collaborative, USA (2013-2014)
Education Outside, USA (2013-2014)
Environment Design Institute, Japan (2013-2014)
Learnscapes Planning and Design, Australia (2013-2014)

© PLAY LEARNING LIFE

What is International School Grounds Month?

In May each year, the International School Grounds Alliance calls on schools around the globe to take their pupils outside to celebrate their grounds. It's as simple as that. We believe school grounds are very important to children and youth, and shape their experience of the world around them.

If you agree with us, we hope you will take some time during the month of May—and throughout the year—to celebrate your grounds by going outside with your students to engage in learning, play and other activities. There is no right or wrong way to take part. You could take academic lessons into your grounds, promote play outside, camp out in your schoolyard or invite parents to the school to watch a play outdoors—whatever works best for your school.

Time spent outdoors could be an hour, a day, or even a week! There are many ways to engage in your grounds.

© SHARON DANKS

Celebrate in May!

This *Activity Guide* includes 50 ideas we gathered for you from our colleagues at 37 organizations in 17 countries around the world. We hope they will inspire you and help you get started dreaming up outdoor activities for your own school.

Please visit our website each year to download the most recent version of the *Activity Guide*, which is updated annually. Please see page 65 for information about additional school ground ideas in a companion set of *Activity Guides* produced by our colleagues at Green Schoolyards America. Together the three publications include a total of 147 activities for children and youth ages 3-18, written by 123 organizations.

After you have participated in International School Grounds Month in May, please share your adventures with us by taking the time to register on our website, using the directions in the blue box to the right. We are very interested in hearing from you! Your participation and reporting of your activities will help us spread the word to other schools, governments and organizations who might be able to help promote and support more vibrant school grounds around the world in the future.

Be sure to visit our website in during and after the month of May to read the stories written by other schools, near and far!

SHARE YOUR CELEBRATION

Please tell us about your school ground adventures in May by sending us the following information:

- Name of your school
- School's location: city, state or province, country
- A brief description of how you celebrated International School Grounds Month (100-400 words)
- Photo(s) showing your activity in progress. (Please confirm you have permission to use these images and to share them with the public in print and online.)
- Contact name and email address
- Age range and number of participating students
- School or project website (if you have one)

Submit by email: *info@internationalschoolgrounds.org* or via website: *http://bit.ly/ISGAmay*

Following the event, we will share many of the activity reports we receive by posting them on our website and social networks. We are looking forward to hearing about your work and hope you enjoy the celebration!

Contents

Introduction

When you think about typical school grounds, what image first comes to mind? For many people, school grounds are places covered by paved surfaces and manicured sports fields, adorned with a few, simple shrubs and trees, and one or two ordinary climbing structures. Most school grounds look the same, with very little variation to reflect unique aspects of each school community, the neighborhood's ecological or geographic context, or teachers' preferred curricula.

Children are masters at reading what Wendy Titman calls the "hidden curriculum" of school grounds, and understand the value adults place on them through the level of care given to their surroundings. The messages most traditional schoolyards send children about their place in the world is not reassuring—particularly in our cities where many school sites are paved and are home to very few living things.

Outside of school, spaces children can explore on their own have been shrinking over the last few generations, reducing children's domain from miles of free ranging territory to the limited zone between home and the end of the block. School grounds are now one of the only places many children are allowed to play outdoors on a daily basis, and they are increasingly important for fostering children's health and development. With this in mind, schools have a special responsibility to provide the next generation with outdoor experiences that help them develop their curiosity, their sense of adventure, a healthy lifestyle and a love of nature.

A green or "living" schoolyard movement is gaining momentum around the globe and has the potential to improve the lives of *every child, every day*. Schools are reshaping their traditional yards, designed for 1940s educational methods, and creating beautiful, ecologically diverse landscapes with an eye toward the future. School ground greening creates rich environments that connect nature and environmental sustainability with place-based learning, hands-on curricula, and imaginative play, while also building community.

The movement is growing around the world, and we invite you to join us in this vitally important work.

WHAT ARE LIVING SCHOOLYARDS?

Living schoolyards are richly layered outdoor environments on school grounds that connect nature and local ecological systems with place-based learning, hands-on curricula, and a wide range of play and social opportunities for children and youth of all ages, while engaging the community.

WHY ENRICH SCHOOL GROUNDS?

TEACH PLACE-BASED UNDERSTANDING. Living schoolyards provide opportunities for students to tune in to their surroundings and get hands-on experience with nature while gaining a better understanding of their own neighborhoods. They help children mark the seasons with changes in wildlife migrations, colorful leaves in autumn, and the length of shadows on the ground. They bring watershed education to life, as classes step outside when it rains to watch the rain flow off their school building, through a downspout, and out into the school's rain garden or cistern. Many excellent, low-cost educational resources sit right outside the classroom doors, waiting to be tapped.

PRACTICE STEWARDSHIP. Ecologically-rich schoolyards address important environmental issues in ways that even young children can participate in and understand. Students can identify place-based environmental concerns themselves and become empowered to repair them, enriching their own corner of the world with their ingenuity. While these individual actions may be small, together these projects can fundamentally improve the local environment and profoundly change the way that students understand their place in the world. This is an inspiring and optimistic way to approach the field of environmental education.

FOSTER ADVENTURE, WONDER AND HEALTH. Green school grounds foster children's social, physical and intellectual growth by providing settings for imagination, exploration, adventure and wonder, and serve as dynamic environments in which to run, hop, skip, jump, twirl, eat and play in active, challenging and creative ways. Enriched school grounds provide child-driven, play-based solutions to obesity problems and can promote healthier lifestyles through increased physical activity and nutrition-oriented gardening and cooking programs.

ENGAGE THE COMMUNITY. Living schoolyards teach ecological literacy, invigorate children's bodies, open and inspire young minds, and knit our communities more closely together in the process. Successful green schoolyards are the product of many hands that harness the collaborative potential of their school communities. Cooperation among community members reinforces interdependence, local self-reliance and a sense of community creating useful, beautiful places at low cost. When parents, teachers and students work together to improve their school and grounds, they foster closer relationships that in turn support student achievement and well-being. This movement shifts the way our society views these important, shared public spaces, and supports school district land management efforts with the energy of community partners.

The transition from a traditional, paved schoolyard to a living schoolyard can be dramatic and opens up a variety of opportunities for children to learn, play and explore.

MODEL THE FUTURE YOU WOULD LIKE TO SEE

Well-designed green schoolyards model the ecologically-rich cities we would like to inhabit, at a smaller scale, and teach the next generation how to live more lightly on the Earth—shaping places where urbanization and nature coexist and natural systems are prominent and visible, for all to enjoy.

They inspire students and their communities with organic food production, wildlife habitat, energy conservation and production, rainwater collection and management, sustainable design practices and creative artwork. By teaching students to explore their environment with their hands, hearts, and minds—whether they are climbing into a tree house or tackling the challenges of the surrounding world—living schoolyards help us to plant seeds that will blossom as children grow up and help to shape an ecologically literate society.

We are all important participants of the green school ground movement. You can help it reach its potential to touch children in every neighborhood—by starting with your own. Get a conversation going with your neighbors, the principal at your local school, and your school district administrators. Dream of the school environment you would like to see for our children, and then help to shape this reality at your local school. The schoolyards of tomorrow will be what you and your community make them.

Environmental planner Sharon Gamson Danks is CEO of Green Schoolyards America, based in Berkeley, California, and a co-founder of the International School Grounds Alliance. Her work transforms school grounds into vibrant public spaces that reflect and enhance local ecology, engage the community, and nurture children as they learn and play.

[2] Adapted from an article by Sharon Gamson Danks published by Children & Nature Network in *The New Nature Movement: Guest Columns* blog, Feb 6, 2014. Photographs and text © Sharon Gamson Danks, 2005-2016.

Art

Living schoolyards provide settings and inspiration for creative projects ranging from writing assignments to drawing, painting, mosaic, nature art and sculpture.

STUDIO SPACE Students of all ages benefit from art studio spaces that allow creativity to blossom—and that are easy to clean, comfortable, inviting and spacious. Enriched school grounds can include formal or informal outdoor art studios that increase teaching space and accommodate messier art forms that are more difficult to practice inside.

CREATIVE EXPRESSION Schools can diversify the recreational offerings they provide to students of all ages during their outdoor free time by including an array of inexpensive, outdoor art materials among their supplies. Unstructured "art time" allows students to get their hands dirty and express themselves creatively in ways that are not always possible during the rest of the school day.

OUTDOOR EXHIBITS Outdoor art installations turn ordinary school grounds into beautiful, memorable places that delight the eye and speak to the heart, while also showing students the school community cares about their environment. Temporary and permanent schoolyard artwork can reflect local culture, highlight regional ecosystems and instill school spirit.[3]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

MOSAIC PICTURES WITH NATURAL MATERIALS

© SHARON DANKS

AGES

4-10 years old

CONTRIBUTED BY

Green Schoolyards America
Berkeley, California, USA
www.greenschoolyards.org

Many children enjoy engaging in creative art projects in their free time. In this activity, children create temporary, artful, "mosaic" compositions by assembling natural materials they find on their school grounds or using other materials provided by school staff. Children may create this type of art at recess or during an art class with their teacher.

MATERIALS

- Many different types of natural materials may be used for this activity including: sticks, stones, gravel, flowers, leaves, pinecones and seeds. Some of these materials may be found onsite and others may be acquired from local homes or parks (with permission) or purchased inexpensively at local garden stores.

DIRECTIONS

- Allow children to gather natural materials from the school grounds, if possible. If the school has a garden or other plantings that are pruned regularly, save the most interesting trimmings for use in this activity. If the school has abundant vegetation, it's nice to allow children to pick some fresh flowers and leaves just before they begin their work, for added color and variety.
- Encourage children to create their own pictures by arranging the materials they have on hand on the ground in abstract or representative forms, as they like.
- When recess or class time is over, the compositions may be cleaned up and the materials returned to their prior locations.
- For schools without access to natural materials onsite, it's often helpful to put special natural materials (such as bags of purchased, colored stones), into a basket or cart that may be brought outside at recess on a regular basis.

VARIATIONS

- For younger children studying numbers: Ask each child to create a picture using a fixed number of elements. For example, create a composition using 100 leaves.
- Some schools set aside a permanent "art studio" in their schoolyard to facilitate outdoor art activities. Having a dedicated, outdoor art space also allows children to work on larger scale compositions and to leave them in place for a short time. These dedicated art studios can also include permanent storage bins for a wide variety of natural materials. Some teachers like to encourage students to try creating work inspired by artist Andy Goldsworthy and other nature artists.

WEAVING WITH PLANT MATERIALS

© AYESHA ERCELAWN

AGES

4-12 years old

CONTRIBUTED BY

Ayesha Ercelawn, La Scuola
San Francisco, California, USA
www.lascuolasf.org

A beautiful variety of plant materials can be used for weaving outdoors. This activity can range from simple to complex depending on the children's age and prior experience with weaving. You can create a simple cardboard loom for individual projects, construct a large wooden loom for group projects, or weave a beautiful fence using sticks pushed into the dirt. For plant weaving materials, the primary criteria is flexibility.

MATERIALS

- Loom(s) made from wood or cardboard
- Yarn, scissors and small plant clippers
- Strong twigs and a variety of flexible plant materials

DIRECTIONS

- To create a simple cardboard loom for small, individual weavings, use any strong piece of cardboard. To create a weaving project that can be finished in one sitting, use pieces approximately 8"x11" (20 x 28 cm) each.
- Cut short 1" (2 cm) slits in the cardboard, about ½"-1" (1-2 cm) apart. Do this on both ends of the cardboard, making sure the slits line up with each other vertically.
- Use your yarn to warp the loom on one side. On the back, you will make a loop from one slit to the next to come back to the front. Leave a long piece of yarn at the start and at the end (start and finish at the top of the loom).
- Let children experiment with a variety of materials. Make sure each row/weft they weave is pushed up close to the previous one.
- There are several ways to finish the weaving. The easiest is to just leave the weaving on the cardboard loom. But if you want to take it off, gently slide yarn loops off the top and bottom and weave the yarn and leaf ends into the back side. Or you can add a twig on the top and bottom, by weaving them in, to create a hanging.

MAKE YOUR OWN VINE CHARCOAL *(GÖRA RITKOL)*

AGES

6-18 years old

CONTRIBUTED BY

Naturskolan i Lund
Lund, Sweden
www.lund.se/naturskolan

Vine charcoal is a lovely, expressive art material that is very useful for sketching and drawing—and can be created from supplies you find on your own school ground. Below are two different methods for creating your own vine charcoal.

METHOD #1: FOR MANY PIECES AT ONCE

MATERIALS

- Sticks from hazel or lime trees, straight and as thick as your finger. It's often easy find sticks during springtime when the trees near schools are pruned back. If you want, you can keep them for use later on. You can probably use sticks of other wood as well. Try what you find near your school!
- Tin can (e.g. bean or tomato tin)
- Tinfoil to cover the tin
- Dry sand (You can use sand from the sand pit in your school ground.)
- Saw, knife or a pair of pruning shears to cut the sticks into the lengths you'd like to use.
- Firewood and a good place to make the fire

DIRECTIONS

- Cut the sticks to the same length as the height of the tin. Pour the sand into the tin, nearly all the way up to the brim. Drive the sticks firmly into the sand. Make sure that the sticks are evenly spaced.
- Cover the tin with a few layers of tinfoil, so the covering gets nice and thick.
- Put the tin into the fire and let it stay there for 30-45 minutes. Allow the tin to cool down a little before emptying. And now you have your vine charcoal!

METHOD #2: FASTER METHOD

MATERIALS

- Sticks from hazel or lime trees, straight and as thick as your finger.
- Tinfoil
- Awl
- Tools to cut the sticks into the lengths you'd like to use.
- Firewood and a good place to make the fire

DIRECTIONS

- Wrap a stick, approximately 5 cm (2") long, entirely in the tinfoil. Make sure the tinfoil covers the stick completely. Use the awl to make a hole through the tin foil and into the stick. This will become the chimney for the stick.
- Put the stick into the fire and wait for 10-15 minutes. The time the stick needs to be in the fire depends on the stick's thickness, if the stick is fresh or dry, and the fire's temperature. Watch for smoke from the "chimney". In most cases, some smoke (steam) can be observed. When it stops, pull the stick out of the fire and carefully open the tinfoil to check if the vine charcoal is ready. If it's not, just wrap it up again and put it back into the fire.
- Don´t let the stick stay too long in the glow as it will become very brittle and may break into small useless pieces. A perfect piece of vine charcoal will be uniformly black, but holds together well enough to be a sturdy drawing tool.

THE FINE ART OF FLOWER POUNDING

© LIFE LAB

AGES

7-17 years old

CONTRIBUTED BY

Life Lab
Santa Cruz, California, USA
www.lifelab.org

In this activity you will harvest flowers with students and then pound their colors on to paper, leaving a beautiful flower print behind. What kid doesn't love hitting things with a hammer?

MATERIALS

- Cutting board
- Dishtowel
- Fresh flowers and leaves
- Hammers
- Wide painter's tape
- Watercolor paper cut into bookmarks or note cards

DIRECTIONS

- Place a cutting board on top of a dishtowel. Place a piece of watercolor paper on top of the cutting board.
- Harvest a handful of fresh flowers and leaves. Note that some flowers work better for flower pounding than others, so harvest a variety to test them.
- Cut the stems and as much of the green back off of the flowers as possible. If the flower has a large center, remove it and use only the petals.
- Place the flowers and leaves face down on the watercolor paper. For large flowers, only place the petals on the paper.
- To remove some of the tack from the painter's tape, stick it to your pant leg once or twice.
- Now cover the flowers and leaves completely with a single layer of painter's tape.
- Pound on the tape with a hammer, making sure to hit each section multiple times. You can place a phone book below the paper to dampen the noise.
- Carefully peel off some of the tape and peek at the paper to see if any area needs more pounding.
- When you're satisfied with the print, peel off all of the tape. The colors should have left a print on your paper.
- Remove any flower or leaf pieces that are still stuck to the paper.
- Allow the paper to dry and use it as a note card, bookmark, or anything else you can think of. Laminating the bookmarks makes for a nice finishing touch.

© SHARON DANKS

ARTIST'S VIEW OF THE SCHOOL GROUND

© MIKE DERBLICH

AGES

6-18 years old

CONTRIBUTED BY

Evergreen
Toronto, Ontario, Canada
www.evergreen.ca

This activity enables students to examine natural materials that are most often overlooked on our sidewalks, pathways and natural landscapes, and view them as artists. The activity works well for creating abstract pieces, where the colour, lines and form become the focus of the artwork.

MATERIALS

- Clear acetate sheets, one per student
- Permanent markers, one per student
- Acrylic paints in a variety of colours
- Paint brushes
- Old Tupperware or kitchen containers to use for water and mixing paints
- Paper towels for clean-up

DIRECTIONS

- Lay an acetate sheet on a patch of the ground. Ask students to observe interesting shapes, lines and colours. Students will then trace the outline of the details visible under their acetate. (e.g. cracks on the pavement, lines on leaves, twigs, etc.)
- Once the students have finished tracing, ask them to add colour to their artwork by applying paint with fine brushes. If you don't wish to use paint, oil pastel also works.
- Once the paint is dry, flip the acetate over, so that the paint and marker are on the back, and there is nothing that can be smudged on the front.
- You can make a black construction paper frame, or mount the artwork on a piece of white paper.
- You may wish to display the artworks individually or to attach the sheets together to form an abstract or "stained glass" quilt that represents the collective class perspective of the school grounds.

ENRICHMENT AND EXTENSION ACTIVITIES

- To explore colour in more detail, you may wish to assign students to use a monochromatic colour scheme, work with contrasting colours, or explore how to use colour intensity to emphasize something in their artwork.
- Another approach is to have students look at their tracing and use their imagination to turn their lines into representations of something concrete (be it an object or an animal). What do they see? The children's book *Beautiful Oops* provides a great introduction to this approach.
- To practice writing skills, ask students to write poetry to describe the school grounds. If you mount the acetate artworks on large pieces of paper with a wide border, students can express their view of the school grounds using words around the frame.

References: This activity was adapted from lesson plans by Julie Frost and Dorie Preston and inspired by Hilary Inwood, Instructor, Ontario Institute of Studies in Education, University of Toronto.

CREATE AND FLY CARP STREAMERS ON YOUR GROUNDS

AGES

4-10 years old

CONTRIBUTED BY

Environment Design Institute
Tokyo, Japan
www.ms-edi.co.jp/youho/htdocs/

MORE INFORMATION AND INSTRUCTIONS

In Japanese, with helpful step-by-step photographs:
http://bit.ly/1URMblu and *http://bit.ly/1RYwhjv*

May is the season of flying carp streamers (wind socks) and includes Children's Day in Japan. Let's encourage schools to fly carp streamers on their grounds, and to make them with children. When the carp streamers are finished, encourage the children to draw pictures of their school grounds with flying carp streamers.

MATERIALS AND DIRECTIONS

- Pieces of cloth to create the fish-shaped wind socks
- Acrylic paint to decorate the fish (You can make the carps' scales using children's handprints!)
- Needle and thread to sew the fish-shaped wind socks
- Some rope and wire to hang up the completed fish

IN A BOX

© PLAY LEARNING LIFE

AGES

6-11 years old

CONTRIBUTED BY

Play Learning Life
Winchester, Hampshire, England, UK
www.playlearninglife.org.uk

"In a Box" is a way of getting creative within your school grounds using cardboard boxes. Children choose a box to place somewhere in their school grounds and create a scene inside using things they find around them. These can be stand-alone art works or they can be structured as scenes that tell a story.

MATERIALS

- A selection of boxes of different shapes and sizes, one box per group of kids
- Natural materials found on school grounds
- Art supplies like scissors and markers

DIRECTIONS

- Each artist or group is to make a picture within their box using materials found in the school grounds. This helps to frame the picture and challenges them to find items that fit within a small space.
- You can let pupils create any picture they like, set a theme or make each box a scene within a sequence. For example, this could be specified scenes within a known story or could be the starting point for creative writing. To illustrate a story, each box becomes a scene and the pupils write a narrative that progresses from one box to the next as they walk around the grounds.
- Students can also take photographs of the images in the boxes and save the stories written about them, to display in the classroom or on the school's website.

ART ON THE FENCE

© HERB BRODA

Ford Elementary School near Atlanta, Georgia, USA placed student artwork on their fence to create a unique outdoor gallery.

AGES

7-12 years old

CONTRIBUTED BY

Herb Broda, Ashland University
Ashland, Ohio, USA
movingtheclassroomoutdoors.com

Most schools have a UCLF—"unattractive chain link fence". Turn the fence into an outdoor art gallery by using the fence as a background. The artwork takes your eyes away from the fence and creates an effective backdrop for student creativity. The beauty of this art gallery is that the displays can be easily changed, allowing for themed exhibits or grade level-specific shows.

MATERIALS

- 1/2" or 3/4" (1-2 cm) thick plywood, enough for a whole class to create their drawings
- Wood primer suitable for painting the outside of a house, to paint on all sides of each piece of wood
- Paints that can be covered with a waterproof sealer, along with a variety of brushes
- Drop cloths and rags to catch and clean up paint drips
- Clear, weatherproof, outdoor sealer to apply over the children's paintings
- Wire and wire cutters for attaching plywood to the fence
- Drill, for putting holes in plywood, to attach the paintings to the fence

SUGGESTED THEMES

- FLOWER GARDEN: Ask each child to draw a flower.
- WILDLIFE HABITAT: Ask each child to depict an animal, insect or plant that occurs in your local area.
- LOCAL OR STATE HISTORY: Ask each child to depict a person, place or event that has historical significance.
- LITERATURE FOCUS: Ask each child depict a person, place or event that is related to a piece of literature.

DIRECTIONS

- Cut the plywood into the sizes to be placed on the fence. Prepare a piece of plywood for each child.
- Prime the plywood on all sides.
- Ask the class to decide on a theme for the artwork.
- Provide paints, brushes, drop cloths and rags as the painting process begins.
- Apply the waterproof sealer to the artwork when the children's paintings are finished and completely dry.
- Drill holes and use wire to attach the artwork to the fence.

TIPS

- Limit the children's color palette to a small number of colors to help the group of paintings have greater, collective visual impact.
- Be sure to include all artwork. This should not be a "best work" show.
- Change the display several times during the year and involve a variety of grade levels.

Recreation

Enriched school grounds encourage exploration, imagination, relaxation and free choice among a variety of recreational options, from ball games and climbing equipment to informal play in bushes, trees and flowers. They include space for traditional sports and games with rules created by adults, as well as places for children to dream up their own games without adult involvement.

Rich, interesting, well-designed green schoolyard spaces invite children to climb and run and swing and balance, to dig and pretend and create. They lend themselves well to creative play with art materials, musical instruments and performing arts. Their planted areas invite kids to engage in open-ended "nature play," find the little creatures that live in the soil, and unwind and explore "far away lands" with their best friend from the comfort of a cozy corner of the schoolyard.

School grounds can also become shared community resources after hours, providing multi-use, public open space within walking distance of every neighborhood. They are often the sites of annual school and community festivals and can be used creatively outside of school hours and on the weekends.[1]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

USING LOOSE MATERIALS FOR PLAY

© GROUNDS FOR LEARNING

AGES

2-10 years old

CONTRIBUTED BY

Grounds for Learning
Stirling, Scotland, UK
www.ltl.org.uk/scotland/

Lots of schools take a variety of small play equipment into their grounds for pupils to play with over break or lunch times. If you provide children with hoops, balls, ropes, bean bags and other loose play parts you will see lots of sports-type games going on. But what happens to those children who don't like sports very much? Why not add some different materials so that you can get everyone involved in creative and more social play. Using open-ended materials means that children work together to build dens, tell stories, invent their own worlds or make their own art works.

The most successful play provision is accompanied by staff training, including discussions of: the value of play; the role of the adult; issues and concerns of staff and parents; practical issues such as storage, maintenance and managing risk; practical sessions with children playing with different types of loose play equipment; and how to best include parents and other family members playing, too.

© SHARON DANKS

MATERIALS

The materials used for open-ended, loose parts play might include pieces of scrap or natural materials—anything that can be used in many different ways. Some ideas include:

- Sticks and stones
- Tarpaulins and sheets
- Sand
- Drainpipes
- Ropes
- Hosepipe
- Live willow plantings
- Logs
- Leaves, feathers, shells, gravel, pine cones
- Cardboard
- Bungee ties
- Straw bales
- Wooden pennies (circles of timber)

POP-UP ADVENTURE PLAYGROUNDS

© POP-UP ADVENTURE PLAY

AGES

4-18 years old

CONTRIBUTED BY

Pop-Up Adventure Play
Manchester, England, UK
www.popupadventureplay.org

A pop-up adventure playground is a public play space designed to allow children to take ownership of their own play. Using natural and recycled loose material, this activity offers self-directed, open-ended opportunities for experimental, exploratory and empowering play. This in turn helps to build social cohesion, personal resiliency, creative problem-solving and empathy.

MATERIALS

- Select a variety of recycled and natural loose materials that are low cost or free, such as: lightly used cardboard boxes, tubes, fabric, plastic bottle caps, rope, tyres, branches, leaves, acorns and pebbles.
- Think about how the materials might work together in harmony, like a wok filled with acorns, or rope to tie sticks together for a teepee. There is no right or wrong for how these open-ended objects can be played with, but make suggestions to the children to get them started. Be sure to select loose parts that are suitable for your audience (no tiny objects for toddlers) and for your space (nothing that shatters to become sharp). The only tools required for this type of play space are scissors and tape, and the permission to do whatever they want with whatever you have provided.

DIRECTIONS

- Take your collection of loose parts to a school ground or other public space, set them up in a curious manner and then invite children to explore and play. The materials are cheaply or freely available so that we can create an environment where we can say "yes" to their imaginative ideas and plans.
- Once this is in place, step back and observe, and only get involved when a child invites you to help. A successful pop-up adventure playground will require little adult involvement.
- The tidy-up process can be a simple case of putting everything into the nearest recycling container or taking everything apart and storing it away to be ready for the next session. Schools might consider creating a permanent storage area for all types of loose parts, somewhere outdoors where children can access it at recess and before or after school. It's helpful to label these storage bins so students can take charge of clean up.
- The pop-up adventure playground model draws from the UK-based professional field of playwork theory and practice. Worldwide, there are now pop-up adventure playground independent organisers in 17 different countries. These events have taken place in many different locations including schools, parks, after-school clubs, arboretums, block parties and even children's birthday events. More hints and tips are available for free on our website.

STEAL THE FLAG

© HOANG THI HA

AGES

5-18 years old

CONTRIBUTED BY

Hoang Thi Ha, Hong Duc University
Thanh Hóa Province, Vietnam
www.hdu.edu.vn/en-us

This is a traditional Vietnamese game that is beloved not only by children of all ages, but also by adults. It is played with simple rules. In addition to being lots of fun, the game also helps improve players' agility and it is good for their health.

MATERIALS

- Large open space, at least 10 m by 20 m (33' by 66')
- A small flag or other available object such as a small tree branch, hat, cloth, etc.
- Territory markers: Movable objects of any type that are easily seen when placed on the ground

DIRECTIONS

- Begin with 10 or 12 players (or a minimum of at least 6), and evenly divide them into two teams plus a referee
- Assign each player a number so that each of the teams has a corresponding pair. (For example, each team will have a "Player #1", "Player #2", etc.)
- Place the "flag" in the middle of the playing space.
- Divide the playing space so that each team has its own territory at opposite sides of the field, away from the flag. Mark the borders of the teams' territories in some way.
- When the game starts, the referee will indicate which numbered players should run to the flag to try to steal it. He/she can choose one or two pairs, or more, for each round. The referee can also decide if one pair needs to return to their territory.

HOW TO PLAY

- When the referee calls a number, opposing team members with that number each try to run and steal the flag before the other team can get it, and return it to their own territory.
- If a team member with the wrong number runs for the flag, their team loses that round.
- Once players of both teams get to the flag, everyone else joins. The person with the flag tries to return it to their territory without being touched by a member of the other team. They must cross back into their own team's territory before winning the round. Players use strategy to trick their opponents to avoid being touched while running back with the flag.
- For small children: Simplify the rules so they only need to catch the flag and run back. Prepare many small flags for the game so each team can collect and keep their flags to count at the end.

KPOKORO: AN OUTDOOR NIGERIAN GAME

© ELIZABETH BABALOLA

AGES

6-12 years old

CONTRIBUTED BY

Elizabeth Babalola
Lagos, Nigeria

This is a game usually played by girls, ages 6 – 12, in different parts of Nigeria and usually outdoors. There are a number of variations to the game depending on the location but the emphasis is on rhythmic clapping, coordination of leg movements, quick thinking and the ability to predict your playmate's moves. The following directions are for the horseshoe variation of the game.

DIRECTIONS

- Number of players needed: At least two girls, and usually up to a maximum of ten.
- The objective is to accurately predict and mirror your playmate's leg movement two consecutive times while clapping and skip jumping rhythmically.
- Players stand in a horseshoe formation and the first player, selected randomly or by lots, takes turns with each player in the horseshoe.
- Player #1 (the leader) starts by standing face-to-face with Player #2 (the mirror). Player #1 leads them both in clapping and skip jumping to the same rhythm: "Clap pause clap pause clap-clap-clap pause". At the third pause the leader randomly puts forward one of her legs.
- To win, Player #2 must simultaneously mirror the leader's leg choices two consecutive times. If Player #2 is successful in mirroring Player #1 on two consecutive attempts, they exchange places (switch), and the "mirror" becomes the "leader" and plays the next round with Player #3. If Player #2 is unable to mirror Player #1's movement, the latter immediately moves on to Player #3. She maintains the rhythm without pause and leads them both in clapping and skip jumping. Although the switch can happen at any point along the horseshoe, the new leader must begin at one end of the circle and work towards the end.
- The winning player is the one who successfully moves from one end of the horseshoe to the other without being "mirrored" by any of her playmates.
- For instance, I face you and begin to clap my hands, skip jumping to the rhythm. You clap exactly as I do. I then quickly put out my right leg on the third pause. If you mirror my movement (putting out your left leg) you get one point. On the second round if you again successfully predict and mirror my movement, you get a second point, exchange places with me and take the lead.

RULES

- The mirror's leg choice must be done simultaneously to the leader's. There must be no hesitation from the player standing in the horseshoe.
- If the player in the horseshoe is unable to mirror the leading player's leg choice simultaneously on the first try, the "leader" moves on the next person in line.

ACCOMPANYING MYTH

There is a story of a clever goddess, who comes to a group of young women offering each one a crown, an opportunity in life. Each girl has to correctly interpret the signs and seize her chance at the exact moment it is offered.

Reference: Brewster, Paul G. "Some Nigerian games, with their parallels and analogues." Journal de la Société des Africanistes 24.1 (1954): 31-33.

TRADING POST

© HELEN LEW

AGES

4-10 years old

CONTRIBUTED BY

The Carey School
San Mateo, California, USA
www.careyschool.org

Trading Post is an activity created by the students and inspired by lessons learned about the Native Americans trading goods with early American settlers. Children find materials to use for this activity around the school's natural play space. These items are then brought to the Trading Post for trade, sale or barter.

MATERIALS

- Small items to barter with, such as pinecones and acorns found in the schoolyard or child-made artwork

DIRECTIONS

- Set up a space in your green schoolyard to be your Trading Post.
- Give a lesson on early American life and explain the bartering system that was used at Trading Posts.
- Tell kids they will be trading items and they should either collect natural items or make art to trade.
- Ask the students to bring items to trade, sell or barter to the Trading Post, and let them experiment with the terms of each trade to get a feel for this type of economy.
- The students can then use the new items they receive in their trades to make new creations.

Health

Enhanced school grounds foster children's mental and physical health and well-being by providing settings for curiosity, imagination, exploration, wonder and adventure.

IMPROVED WELL-BEING Studies have shown that many types of green spaces have therapeutic properties that lower blood pressure, help people relax and provide other benefits that improve the mental health and well-being of children, teachers, school administrators and visitors.

SENSORY EXPERIENCES Living schoolyards stimulate the five senses and provide opportunities to engage the whole body to develop children's sense of balance and coordination.

PHYSICAL ACTIVITY Enriched school grounds offer child-driven, play-based solutions to obesity problems. They also provide places for students to be physically active during physical education classes and while participating in sports and other organized fitness games.

HEALTHIER LIFESTYLES Living schoolyards can promote healthier lifestyles through nutrition-oriented gardening and cooking programs. They are also places to learn new skills that foster lifelong health, from water safety to tool use.[3]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

EXPRESSING YOUR FEELINGS

AGES

8-18 years old

CONTRIBUTED BY

Play Learning Life
Winchester, Hampshire, England, UK
www.playlearninglife.org.uk

This is an activity that helps children and young people express their feelings by creating poems that describe places and express emotions. This can be used as part of a wider programme that looks at different aspects of developing an awareness of pupils' own mental health.

MATERIALS

- Pens
- Luggage or gift labels
- Paper

DIRECTIONS

- Walk around outside and explore different places—either inside or outside the official school grounds. Visit places that are quiet, others where lots takes place, places to walk, places to sit, places to learn. Write names for those places on the first set of labels.

- Work with pupils to come up with a list of descriptive words—adjectives that could describe those places. For example: dark, open, bright, dull. Write these on labels and hang them on a tree or fence.
- Think about words that describe the different things you might do in those places. For example: sit, play, run, think. Write these on labels and hang them on another tree or item.
- Finally discuss how you might feel in the different spaces—come up with words that describe those emotions. For example: peaceful, lonely, happy, chilled. Add these to a final set of labels.
- As you do this, ask pupils to think about how the way the spaces were designed or formed made you think that you should behave in certain ways. In some places you know straight away that it is somewhere to be peaceful, whilst another space might be somewhere where you can be noisy. Talk about how these different spaces make you feel, and why that is. Are there some places that you would like to spend more time in than others? Why might that be?
- Taking a word from each group, start making phrases, then sentences, then poems. These could then also be hung in another tree—to create a "poet-tree"—so that they can be read by other pupils, staff and visitors walking around the grounds. You may want to make some of these poems permanent features in the grounds, even carving them in stone, like the example to the left.

SENSORY EXPLORATION

© SCOTT DUNCAN

AGES

5-18 years old

CONTRIBUTED BY

Greenstone Design
Auckland, New Zealand
www.greenstonedesign.co.nz

There is overwhelming evidence to support children's enhanced social skills and cognitive function, improved health and well-being after time spent in a natural environment. Ideally you will have an area of the playground that has grass and some planting. If not, choose an area of smooth asphalt with a view to trees or planting.

MATERIALS

- Beach towels or blankets
- Blindfolds
- Paper and pens
- Bite-size fruit, enough for all students

DIRECTIONS

- Tell your students in advance that you will be going outside into the school playground for this session. Ask them what they expect to hear and see from the location you have chosen. Take a beach towel or blanket for each child, blindfolds, paper, pens and a plate of prepared fruit that the children can eat in their fingers.

© SHARON DANKS

- Explain that for this creative writing exercise they will be developing their powers of observation and engaging with their environment with all of their senses. They will "observe" by seeing, touching, smelling, listening, tasting.
- Brief your class the day before the lesson and again before you go outside so they know what to expect. Choose a space in advance where the children can spread out individually and not be in the way of others.
- Take your class outside.
- Get the children to spread out their towel or blanket and sit or lie down on the ground, preferably on grass, ideally near trees or other plantings. (Allow 3 minutes for the children to settle.)
- Ask the children to breathe deeply for 2 minutes.
- Blindfold all of the children for the first 5 minutes. Offer them fruit to eat while they are taking in the environment.
- Remove the blindfolds and ask the children to write or draw their observations for the next 10 minutes.
- Then, for the next 5 minutes, keep the blindfolds off but ask the students to observe their environment silently. Then give the children another 10 minutes to write and draw their observations.
- Return to the classroom. Remind the children to notice the colours and the view out the window. Ask them to write a short summary statement (5 minutes) to describe how they feel.

LEAF IDENTIFICATION CHALLENGE

© ARTYPLANTZ

AGES

7-13 years old

CONTRIBUTED BY

Karthikeyan V, Ramya Priya S, Surya Suresh
Horticultural Therapists at **ArtyPlantz**
Bangalore, India
www.artyplantz.org

This nature-based activity is designed to activate the senses! It can help students of all abilities to hone their sensing skills and develop a stronger connection to the natural world around them.

MATERIALS

- One blindfold for each pair of students
- 5-10 different textured, shaped or fragrant leaves, for each pair of students

Note: This game is not meant to encourage or discourage anyone. It is intended to improve memory, observation and sensing skills. The teacher can help students by giving clues initially.

DIRECTIONS

- If this is practiced as horticultural theapy, it may be conducted one on one. In a classroom setting, students should be paired up to support one another in this exercise. "Educator" refers to the person who isn't blindfolded, and "student" to the person who is blindfolded.
- The educator collects 5-10 different types of leaves and does not reveal them to the student. The student sits comfortably and puts the blindfold on him/herself.
- The educator gives the leaves one by one to the student, asking them to use their non-visual senses to observe the leaf. The educator gives the name of each leaf.
- Next, the educator gives the leaves to the student in a different order and asks them to recognize each leaf. The student doesn't name the leaf, but instead tries to remember the order.
- The educator should arrange the leaves in front of the student according to the order given and then ask the participant to share the names of the leaves in this order.
- Remove the blindfold and see if their memory and observations were correct.
- If this activity is used in a classroom setting, the partners should switch roles and use new leaves.
- In other settings, the educator can repeat this activity for other students, shuffling the leaf type and order to ensure students are using their senses.

GAGA FOR GREENS

© AMY JAGODNIK

AGES

5-8 years old

CONTRIBUTED BY

Horace Mann Elementary School
Washington, DC, USA
www.horacemanndc.org

In this activity, students learn about nutrition, vegetables, and the parts of the plant they come from, while creating edible art and having a good time!

MATERIALS

- Paper plates, one per student
- Assorted vegetables and greens
- Stapler or brass fasteners
- Elastic ribbon, assembled before beginning the lesson
- Paper and drawing materials for each child
- Pictures of Lady Gaga's fantastic hats
- Pictures of hats made from vegetables

DIRECTIONS

- Assemble your class outdoors in a comfortable place where students can see one another and the teacher, and also access the materials assembled for the lesson. Picnic benches work particularly well for this activity.
- Present an assortment of fresh greens and vegetables to students, and let them use their senses to explore their colors, shapes, textures, and scents, first hand. Ask each student to choose a vegetable from the assortment silently and then in turn describe the attributes of that vegetable to the rest of the group. Students then try to identify the matching plant.
- Show students some pictures of the fantastic hats that Lady Gaga wears for her public appearances. Next, show pictures of hats made from vegetables.
- Ask students to draw a design for a hat they imagine could be made from some of the vegetables on the table. Optional: Students could also draw directly on the plates used for their hats in the next step.
- Give each child a clean paper plate, with an attached elastic strap, to use as the base of their hat. Provide a selection of cut vegetables for students to choose from, and staples or brass fasteners that they can use to attach the vegetables to the hats. Give them time to construct creative arrangements on their hats.
- Ask all of the children to wear their hats and hold a brief "fashion show" or "parade" to admire each others' work.

Social and Emotional Well-Being

Enriched school grounds are ideal places to foster positive, healthy relationships among children, between children and adults, and between people and the environment. Research tells us that nature has a therapeutic influence our mental and physical health, so an environment filled with trees, shrubs, flowers and wildlife is a helpful starting point to set the stage for social and emotional learning that build empathy and collaboration.

EMPATHY Living schoolyards help schools foster an atmosphere that emphasizes care for one another, care for all living things, and care for the Earth. They provide settings that teachers can use for lessons that range from understanding one anothers' feelings to valuing the great diversity of life that shares our world.

COLLABORATION Nurturing an enriched school ground environment—and our community—is best accomplished through collaboration, built on strong, positive relationships. Living schoolyard environments provide opportunities to practice and hone communication, teamwork and stewardship skills, while providing balance for other aspects of school life that are more competitive.[3]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

ACORN GUIDED MOVEMENT

© SHARON DANKS

AGES

4-18 years old

CONTRIBUTED BY

David Sobel, Antioch University New England
Keene, New Hampshire, USA
www.antiochne.edu

In this guided movement activity, students listen to an adult read a descriptive narrative that helps them to imagine that they are an acorn, growing into an oak seedling. They move their bodies as the story is read to them, and experience the natural world around them from a new perspective. Words written below in **bold** are intended as movement prompts.

NARRATIVE TO READ TO STUDENTS

Attach yourself to a tree. What a great view it is from up here. Bright, blue sky, dry October day. You're an acorn attached to the twig of a sturdy oak tree. You can see all the way out to the glistening expanses of the Great Bay with tendrils of rivers coursing into it from all directions. The gentle breezes waft the leaves and branches and you **sway** back and forth, **clacking** up against the twig and other acorns, like your friend Corny who lives next to you on the branch. You **rock rhythmically** on your branch, and then gradually become still.

In the distance you hear a whoosh, like the breaking of waves on a distant beach, a big gust of wind coming towards you. You take a deep breath, anticipating the swooshing of your branch. The gust of wind **rattles** the branches of your big oak, you hold on tight, clinging, but then you're free, **falling**, **ricocheting** off lower branches, uplifted for a moment by a gust of wind, and clomp, you hit the ground, **bounce** in the leaf mulch and then settle in, rolling until you've nestled into a comfortable nook. Not as good a view, but much cozier down here on the forest floor. You like your new location, you take deep breaths and slowly **drift** off to sleep.

What's that? You awaken suddenly, aware of noises around you. Something is clattering the leaves, somehow you know it's a squirrel nearby. You hear gnawing and you realize the squirrel is sinking her teeth into another acorn. *"Oh no, maybe it's Corny!"* You make yourself as small as possible and you try to **scrunch** under the leaves so the squirrel doesn't see you. And it works, the squirrel scampers away.

Other leaves fall on top of you, it's like a warm blanket, you **nestle** down into the leaves and ready yourself for a long winter's nap. Your hardly notice when the snow falls and covers you. You're deep down under the leaves sleeping.

It's springtime, it's raining and you're surrounded by wet leaves. You feel something **stirring deep** inside you. Your feel like you're **swelling**, like a sponge soaking up water, like a balloon being blown up. Your shell cracks, little by little, the crack widening. Then a little piece of you starts to **wiggle out**, your tap root, grows out to the side and then turns and starts to go down into the earth, **burrowing** through the leaves into the soil.

Now another piece of you, your stem, does just the opposite. This piece of you, slender and pale, **reaches upwards**, pushing aside the leaves, splitting your seed. You break through the leaves and move towards the sun, pushing your fleshy seed aside. This part **twists** and **stretches upward**, slowing reaching towards the light.

Now little parts of your leading tip start to separate. Your thin **growing tip spreads** and three tiny leaves emerge. They reach out widely, embracing the spare sunlight on the forest floor, **flattening out** to be horizontal to the sun's rays.

Then another pair of leaves, lower on the stalk and more tiny leaves from your leading bud open—first tiny as mice ears, then **stretching** and **straining** to become full-sized leaves. Your leaves **flop** and **wave** in the gentle breezes that stir the forest floor, you **soak** in the nourishing sunlight. You have become an oak seedling, perhaps destined for great things.

Reference: David Sobel, "Acorn Guided Movement," Antioch University New England. Keene, NH, USA. Used with author's permission.

ANIMAL PERSPECTIVES: MAPPING THE SCHOOL GROUND

© CAM COLLYER

AGES

6-18 years old

CONTRIBUTED BY

Evergreen
Toronto, Ontario, Canada
www. evergreen.ca

Students will use this activity to map the assets on their school grounds through the lens of a living thing.

MATERIALS

- Clipboard and paper, one per group
- Pencil, pen or marker, one per group

© KELLY CRUISE

© EVERGREEN

DIRECTIONS

- Divide students into small groups of three to four students. Each group will assess the outdoor space from the perspective of a living thing. Choose animals or other living things that are appropriate to your region. (e.g. squirrel, raccoon, ant, butterfly, bird, toad, worm, snail)
- Each group is to explore the school ground and map it, identifying any assets (treasures) and barriers (troubles) from the perspective of their living thing.
- Encourage students to look at the big features of the school grounds as well as the smaller details, and ask them to examine the school ground closely for additional treasures and troubles (e.g. look under rotting logs).
- As the students identify treasures and troubles, they should outline and label them on a "treasure map" of the school ground from the perspective of their living thing.

MODIFICATIONS

- Include a base map of the school ground and let students fill in the details, or make three-dimensional representations of the features of the school ground.
- For older students you may wish to map the school ground and surrounding community from the perspective of different stakeholders. (e.g. a developer, a child living in community, an urban planner, etc.)

References: This activity was inspired by Hilary Inwood, Instructor, Ontario Institute of Studies in Education, University of Toronto and "Nature Mapping" by Mark Batcheler, found in *Green Teacher Magazine*, Issue 84.

THE SECRET PICTURE

AGES

5-18 years old

CONTRIBUTED BY

Naturskolan i Lund
Lund, Sweden
www.lund.se/naturskolan

This curriculum-connected activity helps children to practice cooperation and communication skills in a relaxing outdoor setting, while also improving their vocabulary for mathematical and spatial terms and concepts such as "over", "under", "below" and "beside".

MATERIALS

- Conduct this activity in a schoolyard or park environment that is rich with "loose parts" from the natural world such as stones, leaves, flowers and pinecones.

DIRECTIONS

- Divide the group into couples. Ask each couple to fetch two sets of objects. For example, three black stones, two small leaves and one flower.
- The couples should now sit down with their backs against each other.
- One of the children in each pair uses his or her own set of objects to create a pattern or picture of his or her choice.
- After this, it is time for the other child to recreate the same pattern or picture only by taking verbal instructions—no peeking!
- When the couple thinks they have finished, they turn around and check if the pattern came out correctly.
- What similarities and dissimilarities are there? Were the instructions easy or difficult to understand? What could have been communicated more clearly?
- The best part: Everybody wins!

ROBERT'S LITTLE FINGER

© NATURSKOLAN I LUND

AGES

8-11 years old

CONTRIBUTED BY

Naturskolan i Lund
Lund, Sweden
www.lund.se/naturskolan

This activity teaches ratios and collaboration. Students work together to construct a scale model of a member of their group. This activity can be further extended by asking students to collect twigs of a variety of sizes before the activity begins.

MATERIALS

- 20+ twigs, from 2-20 cm long
- Flowers or other small, natural elements for making faces for the stick figures

© SHARON DANKS

DIRECTIONS

- Divide pupils into groups of about five.
- One pupil from each group must take one of the twigs.
- Now each group must use the remaining twigs to create a model (stick figure) of the group member who took the single twig. The single twig represents that group member's little finger.
- Pupils create the model on the ground and must decide on the proportions of their model. When each group has finished, they must guess the scales used by the other groups.
- If the pupil's little finger is 4 cm, with a twig that is 2 cm, the scale will be 1:2. With a twig that is 20 cm, the scale will be 5:1.

JUGGLING IN A GROUP

© FUNDACIÓN PATIO VIVO

AGES

10-18 years old

CONTRIBUTED BY

Fundación Patio Vivo
Santiago, Chile
www.patiovivo.cl

This juggling game allows students to practice cooperative play, teamwork and psychomotor development in an enjoyable manner that also strengthens the classroom community. To play the group juggling game, children will collaborate to focus on their shared goal of keeping all the balls in the air, while also having fun!

MATERIALS

- Seven to ten juggling balls

DIRECTIONS

- Ask ten to twenty students to stand in a large circle.
- Make eye contact with one student, then gently toss one ball to his/her hands. Make sure that the ball is easy to catch, and the distance across the circle is easy to throw.
- Ask the first child to select someone else in the circle by making eye contact, and then throw them the ball.
- Continue with this process, one student at a time, until all of the children have received and tossed the ball once. Nobody can receive the ball twice.
- In the next round, each member receives a ball from the same person and throws it to another person that he/she has chosen. When each child knows from whom he receives the ball and to whom he throws it, the teacher can throw the first ball, and then slowly add the other six balls to the game.
- This game requires attention and coordination among children, since each child will receive and throw a ball very often. When the seven balls are all being thrown simultaneously, the game is a success.
- If a ball falls, the teacher has to stop the game, and ask the group to increase their attention and focus.
- This game requires coordination and teamwork skills. It is very enjoyable when the group finds their rhythm and flow. To increase the difficulty, add addional balls.

Place-Based Understanding

Living schoolyards, built with local, natural materials and native plants, are each unique, reflecting the geography, ecology and culture of their community, and building a sense of place for children and adults who spend time in them.

NATURAL CONTEXT Green schoolyards can showcase local ecosystems in their region, helping children to connect on a daily basis to the living systems that surround them.

GEOGRAPHIC CONTEXT Large painted or three dimensional maps of many types can be added to schoolyards to illustrate the school's location in the world, the country, the state, the city, the neighborhood or even their watershed.

CULTURAL CONTEXT Many school communities have incredibly rich cultural diversity which can be celebrated in their schoolyards with art, events and activities that reflect the school's population and context.

HISTORICAL CONTEXT Every school site and surrounding neighborhood has its own history, whether it is newly built or has stood for hundreds of years. Curricula about local history can be connected to the unique patch of ground managed by your school, and the results may be displayed creatively outdoors, for everyone to enjoy.[3]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

WATER DETECTIVES

© EVERGREEN

AGES

5-14 years old

CONTRIBUTED BY

Evergreen
Toronto, Ontario, Canada
www.evergreen.ca

Water is a rich source of learning at any age. Just think how impressed students will be to learn that the rain falling on their school grounds is the same water from a puddle that a dinosaur splashed through 200 million years ago! School grounds provide an opportunity to bring the water cycle to life as students act as detectives through direct observation and experimentation.

MAKING OBSERVATIONS

- When rain falls on your school ground, where does it go? Go outside and explore your school grounds when it is raining to look for clues.
- Where does the water get "soaked up"? Where does the water pool? Where does it flow? Can you see any curves on your school grounds that indicate which way the water will go? Where the water might end up?
- After a rainstorm, find puddles in your schoolyard. Make observations about the puddles. Label the puddles with chalk. Visit the puddle locations again later in the week. What do you notice?

EXPERIMENTATION

- Follow up with some experimentation to further explore your observations.
- Pour buckets of water over different surfaces (pavement, grass, sand) to explore the concepts of percolation and runoff. What happened to the water on each surface?
- Make evaporation tangible. Place tinfoil pans of water around the school grounds, leaving some uncovered and some covered in plastic wrap. Predict what you will see when you go back outside to check on your tinfoil pans in three hours. What will you see when you go back the next day? The next week? Discuss your observations.

EXTENSIONS

- *Experience water's journey through drama and music.* Invite students to become water molecules and act out the water cycle. Create a musical rainstorm using body percussion.
- *Measure the volume of rain.* Use a rain gauge to measure the rainfall on your school ground.
- *Design a landscape that reduces runoff.* Invite students to design a school ground that reduces runoff. Explore a variety of approaches. (e.g. permeable pavers, green roofs, rain gardens)
- *Live in a snowy climate? Embrace winter.* Learn how snow is formed and how to identify snowflakes using the International Snow Classification System.
- *Go on a water quest in your community.* Look for more clues about where the water may go in the natural and built community beyond the school grounds. Look for storm sewers, creeks and streams, ponds, drainage ditches and other clues.

THE WALKABOUT FIELD GUIDE

© TRUST FOR PUBLIC LAND

AGES

7-18 years old

CONTRIBUTED BY

The Trust for Public Land
NYC Playgrounds Program
New York, New York, USA
www.tpl.org

This hands-on activity helps students become comfortable with identifying the trees in their neighborhood and schoolyards. The students practice looking closely at varying leaf shapes and tree habits. They also get introduced to the idea that all trees have a common name and a scientific name, noted using Binomial nomenclature. This activity is especially suited for schoolyards or streets with a wide variety of trees.

MATERIALS

- Sidewalk chalk
- Tree field guides
- Science notebooks and pencils (optional)
- Camera (optional)

© SHARON DANKS

DIRECTIONS

- Split the class into groups of three or four students and assign each group to a tree in the schoolyard or on the sidewalk in front of your school.
- Distribute the field guides. The teacher can assist each group in identifying their schoolyard or street tree, and confirm the tree's name.
- Ask students to create a tree label on the sidewalk or asphalt using chalk. The label should include the scientific and common name of the tree, and a drawing of the leaf shape and the tree habit.
- After everyone is finished, ask all the groups to "walkabout" the schoolyard and use their science notebooks to take notes on all of the other trees' names, leaf shapes and habits.
- Two optional steps are to photograph each groups' work and then print out and laminate this very site-specific field guide for future use.

BAGGAGE TAGS FOR LEARNING

© EVERGREEN

AGES

7-13 years old

CONTRIBUTED BY

Evergreen
Toronto, Ontario, Canada
www.evergreen.ca

This is an observation activity that can be used to introduce any subject or theme, or as an assessment to demonstrate students' understanding of a topic that they have explored in class. Students will label objects in the schoolyard to reflect descriptions on their "baggage tags".

MATERIALS

- Cardstock paper and scissors
- String or elastic

PREPARATION

- **Before including students in the activity, create "baggage tags" by cutting cardstock into small note-sized pieces, punching a hole in the top of each one, and threading it with a string or an elastic band.**
- **Print an instruction on each "baggage tag" that describes something that the students should look for on the school grounds, that is related to a topic they are exploring in the curriculum. For example: evidence that an animal has been here; something prickly (tied to study of the five senses, or adaptations); something granular (connected to a study of geology); "where some of our ammonia and nitrogen are being recycled" (tied to studies of ecology and nutrient cycles).**

DIRECTIONS

- Provide each student with a "baggage tag" that has an instruction printed on it.
- Give students a fixed amount of time (e.g. 5 minutes) to find a place within a well-defined area of the school ground that matches the description on the card. Ask each student to hang their card on or near the item that matches the description on their card.
- Ask all of the students to return to a central gathering spot when they have accomplished their task.
- Take the whole class on a walk along the trail created by the baggage tags, and ask the kids to share their findings. With larger classes, students can work in pairs to reduce the number of trail stops.

Reference: This activity was inspired by Dennis Wendland, former Evergreen Associate, Waterloo Region.

THE ABC MAT

© NATURSKOLAN I LUND

AGES

5-12 years old

CONTRIBUTED BY

Naturskolan i Lund
Lund, Sweden
www.lund.se/naturskolan

In its simplest form, this curriculum-connected game teaches young children about the alphabet and helps them to work on their language and spelling skills. For older children, teachers can modify this activity to teach more complex grammar lessons and practice foreign language skills. The game also helps pupils tune in to the natural world around them.

MATERIALS

- ABC mats, showing the alphabet, with letters in four or five rows, as shown above. These mats can be hand drawn and made from a large sheet of paper.
- Conduct this activity in a schoolyard or park environment that is rich in "loose parts" from the nature world such as stones, leaves, flowers, pinecones, etc.

© EVERGREEN

DIRECTIONS

In the playground or woods, lay out a mat on the ground that shows the letters of the alphabet. The aim is for pupils to notice the details of their surroundings. A normally insignificant stone can now grace the "S" on the ABC mat and a bit of moss can now proudly take its place on the "M". Pupils scan the area and try to name both small objects and large objects in their hunt for the correct first letter.

Divide the class into groups of three to five. Each group is given an ABC mat. They must find an object for each first letter. This activity can be made into a competition, where each letter of the alphabet gives one point and where the teacher sets a limited time of, for example, ten minutes.

VARIATIONS WITH ADDED COMPLEXITY

Groups receive two points for each object they can be more specific about. For example, a leaf on the "L" receives one point, whereas a maple leaf on the "M" receives two points. You can, of course, play bingo using the ABC mats.

The activity can be repeated with slight changes:

- collect nouns, adjectives or verbs
- collect opposites
- collect species (e.g. not just a leaf but a maple leaf, not just berry but a blueberry)
- collect imaginative words
- move to another area
- allocate points for synonyms: one point for the word "leaf", two points for the word "foliage"
- collect objects that rhyme

GEOCACHING IN YOUR SCHOOL GROUNDS

AGES

6-18 years old

CONTRIBUTED BY

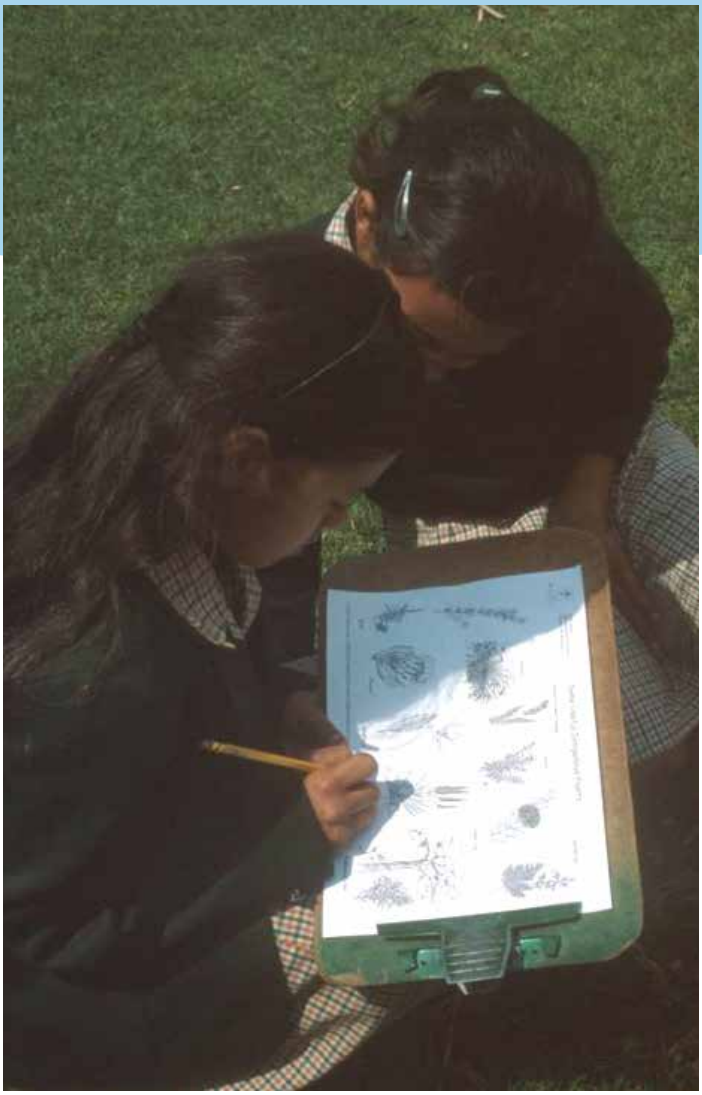
Evergreen
Toronto, Ontario, Canada
www.evergreen.ca

Geocaching is the fastest growing outdoor recreational activity in the world, with more than five million participants in over 200 countries. The basic premise is that a person can go to the official geocaching website (*www.geocaching.com*), type in a location such as a city name or postal code, pick a hidden geocache in the area, load the coordinates into their GPS unit, and then go out and search for it.

You'll be amazed at how many geocaches are hidden all around you in both urban and rural areas! Usually the geocache takes the form of a waterproof container with tradable items inside. Once the container is found and the contents explored, the logbook is signed and the cache is returned to its hiding spot. Then the find is recorded online. This last step enables the finder to communicate with the geocache creator, and to describe their experience as they searched for and found the cache.

Many educators have also recognized geocaching as a valuable tool that can enhance curriculum right across the board. Using the website at *www.geocaching.com*, teachers can find creative ways to incorporate teamwork, social skills, problem solving and other academic challenges into their lesson plans—all while getting their students outside!

Activities for younger students could include finding containers with different coloured counters inside, which the students could then sort by number, size and colour, and then colour a graph to display their results. Older students might have to solve a math problem, sort out a logic puzzle or decrypt a code in order to find the longitude and latitude coordinates of the next geocache, and so on.



For environmentally themed lessons, students can be given coordinates for a certain area of a pond, or a specific type of tree where they may find nature at its best. Other tasks could be to measure the height of a certain species of tree, identify the type of animal tracks on the bank of the creek, count the numbers of fossils in a large rock or simply take a crayon rubbing of a word on an historical plaque. The possibilities are as endless as the creative ideas one possesses.

Geocaching is the perfect outdoor activity because anyone can do it! No matter your age, physical abilities, or interests, you can find a geocache that fits your needs and encourages you to get outside, engage in a fun and challenging activity, and explore. Remember, "it's the journey, not the destination." So grab a GPS and head outdoors—there is a whole world just waiting to be discovered.

TRAVELING FRUIT AND VEGETABLES

AGES

8-12 years old

CONTRIBUTED BY

Play Learning Life
Winchester, Hampshire, England, UK
www.playlearninglife.org.uk

This is an activity about mapping, using fruits and vegetables grown in your own school grounds. Each is moved around the grounds by pupils. One person places a fruit or vegetable somewhere in the grounds and someone else has to find it and record its latest location on a map of the site.

MATERIALS

- One fruit or vegetable per student group
- Map of school grounds (preferably created by students)

DIRECTIONS

- For this activity, pupils work in groups. Each group choses, or is allocated, a different fruit or vegetable grown on their school grounds. Each group must have a different item so that they can tell which is theirs when they go searching around the school grounds.
- The first person in each group takes their piece of fruit or vegetable and places it in full view somewhere in their school grounds. They should put it somewhere that it would not be expected to be seen so that there is no confusion with other fruit or vegetables outside. No one else in their group should see where the fruit or vegetable has been placed.
- After placing their item, they return to their group and the second person sets out. When they find the item they take a photograph of it and mark its location on a map of the school grounds. They then reposition the item somewhere else in the grounds.
- The second person then returns to their group and sends the next person out to photograph it, mark it on their map and move it. Continue this until everyone has had a go. You should end up with the person who first placed the item outside finding and recording its final location before bringing it back to the group.
- On return to the group, print out the photographs of the fruit and vegetables and place them on the team's map. Pupils can also create a map of all the journeys their fruit and vegetables have taken, seeing how much of the grounds everyone visited. Use different colours to indicate the different pathways each piece of fruit or vegetable went on its travels around the grounds.

Reference: This activity was inspired by "The Travelling Lemon" from Cabin Pressure, by John Finnemore.

Wildlife and Habitat

Schoolyard wildlife and native habitat zones are important and engaging places that help students of all ages connect to the natural world. They illustrate that "the environment" is not just a far away place—it is something that surrounds us all in our local neighborhoods. Wildlife sanctuaries and schoolyard ecosystems, large or small, enrich school curricula while providing refuges for a variety of species. They allow students to see that wildlife can exist in urban and suburban areas and even thrive with a little help. Wildlife areas and native plantings can be connected to the curriculum in countless ways, including nature observation in science classes, sketching practice in art classes, and population estimates/counts for math classes.

The strongest projects provide well-rounded habitats that fulfill the basic needs of local wildlife—consistent food sources, clean water, shelter and areas where they can rear their offspring. Successful schoolyard wildlife sanctuaries also provide places for students to observe birds, animals and insects while leaving the creatures relatively undisturbed. They are peaceful havens for quiet reflection where flora and fauna are nurtured, changes happen slowly following ecological cycles and planting schemes highlight seasonal change and mimic natural patterns.[1]

ACTIVITIES IN THIS CHAPTER

WEB OF LIFE

© GREEN-SCHOOLS IRELAND

AGES

8-18 years old

CONTRIBUTED BY

Green-Schools Ireland *and*
The Foundation for Environmental Education (FEE)
Dublin, Ireland *and* Copenhagen, Denmark
www.greenschoolsireland.org
www.fee.global and www.ecoschools.global

A colleague introduced us to this activity many years ago and we have been using it ever since. We have found it to be really effective for demonstrating the interconnectedness of all living things. It is a very enjoyable and engaging activity for all ages and all sorts of groups!

MATERIALS

- 1 ball of string, at least 20 m long
- Approximately 15 labels or pictures, each being the name or image of an element in an ecosystem. For a woodland ecosystem in Ireland, that could include the following: oak tree, frog, heron, otter, fish, spider, bee, fly, beetle, bat, bluebell, squirrel, river, soil, river, rain.

DIRECTIONS

- Participants stand in a circle, facing inwards.
- Each participant is given a label or picture to stick on the front of their jumper, or to hold facing the inside of the circle.
- One participant (e.g. the "oak tree") holds the end of the string, then hands the ball to another participant (e.g. the "spider") while making a statement about the relationship between the two things, e.g. "The oak tree provides shelter in its branches for the spider to weave its web."
- Next, the "spider" passes the ball to a third participant, e.g. "the fly", whilst still holding onto a section of the string, again making a statement about their relationship in nature, e.g. "The spider gets its energy by eating the fly."
- Now two participants are holding the string, whilst the third participant is holding the ball of string. Be sure to keep the string taut!
- The activity continues like this, with the ball being passed back and forth, but each participant holds onto a piece of the string, after they have made a statement.
- Some elements like the soil or the oak tree, will end up having multiple relationships and connections. In this case, the participant may be holding the string in three or four different places.
- Soon a web of string will have been created, producing The Web of Life!

EXTENSIONS

- Ask participants some questions to explore the topic further, e.g. "What does the string look like now?" "What does this tell us about connections in nature?" The facilitator can gently push the centre of "the web" to demonstrate how strong the web is.
- To demonstrate that "the web" can be disrupted, you can remove one key element of the web, e.g. "the river gets polluted" or "the oak tree gets chopped down." The participant with that sticker or picture then drops all of the string that they are holding. The web is no longer strong, it is weak with loose thread. Discuss this with the group and ask them to talk about the consequences this will have on all elements of the web.

GROWING PLACES FOR ECOLOGICAL LEARNING

© KEITARO ITO

AGES

6-12 years old

CONTRIBUTED BY

Keitaro ITO Lab., Kyushu Institute of Technology
Fukuoka, Japan
www.keitaroito-lab-kit.com

In this activity, students learn about ecological processes by assessing the biodiversity in their school ground and then acting to create and improve their own schoolyard ecosystem.

MATERIALS

- Native plant species found in local ecosystems
- Garden tools
- Materials related to your own local ecosystem

BACKGROUND

This project to create a schoolyard biotope (wildlife habitat) started at an elementary school in Fukuoka City, in southern Japan, and engaged children in creating a place to play while helping to restore nature to their neighborhood. The goals of this project are: 1) to restore nature to an urban area; 2) to create a "natural" play area for children that also serves as a space for environmental education; and 3) to link the schoolyard green space to a larger urban ecological network to help address wildlife habitat fragmentation in the region. The school children and teachers participated throughout the project, and contributed to the design, construction and planting process. Children now enjoy their schoolyard biotope for learning and play, and it is home to many small creatures.

DIRECTIONS

- Invite professors and students from local universities to work with teachers and students at your school. Collaborate with local experts to evaluate your school ground with students to understand what types of animals and plants it currently supports. Study local ecosystems by touring nature areas near your school and determine which plants and animals are native to your school's neighborhood.
- Work with students to transform the schoolyard into a model of a local ecosystem. Invite all students to learn about ecological processes and participate in building the landscape and installing new plants. Students will learn about ecological issues first hand as they garden. Study and record biological diversity before, during and after the project is completed. Discuss ecological processes.

BOTANY BOUQUET

© MARY JACKSON

AGES

6-18 years old

CONTRIBUTED BY

Earth Partnership for Schools
Madison, Wisconsin, USA
www.uwarboretum.org/eps/

This activity introduces various plant species from the same or different ecosystems and encourages observational, organizational and taxonomic skills. It could be a good introduction to a plant unit, or it could be used as a creative and interactive "icebreaker" among a group of students who do not know each other well.

BACKGROUND

There are a variety of languages spoken around the world. For a long time scientists were confronted with the challenge that one plant or animal species could have many different names, depending on what language was spoken. This challenge created all sorts of language barriers when scientists from different parts of the world wanted to talk about their research. In 1758 a Swedish biologist, Carl Linnaeus, decided everyone should use the same name to describe a given species. He proposed a universal naming system, using Latin as the root source. He chose Latin, which is often a combination of Latin and Greek, because it was historically the language used by educated people in his part of the world, Europe.

This activity will help students understand the scientific naming process and familiarize them with the diversity and unique attributes of species they plant on their school grounds. Students will learn to closely observe the variety of patterns and shapes of plant parts. The next step can be applying names to what they observe in terms of plant structure.

MATERIALS

Before the activity begins, prepare a bouquet of plant species representing one or more ecosystems. You will need multiple samples of plants from a handful of different species. The number of samples of each species should equal approximately a third to a quarter of the total number of students in your group. For example, a group of twenty students might break into four smaller groups of five, which would require five samples each from four different plant species.

DIRECTIONS

- Mix the bouquet well and give one plant to each person. Those who already know the names of the plants should not share that information until the end of the activity.
- With your plant in hand, find other students who have the same plant and form a small group. If you don't know the other students, introduce yourselves to one another.
- In your small group, come up with a creative description of your plant based on your close observations. Describe it in a way that would help others identify the plant.
- Then, come up with a creative name for your plant. At this point, ask representative(s) from each group present their plant's creative name and description.
- Once each small group has shared their creative name and plant description, find out if the larger group knows the common and scientific names of the plant. If the names are unknown, the teacher can share them along with a further description, especially identifying the plant's ecological and human uses.
- After this activity, discuss as a group why you think there are scientific names for plants. Then review the history of why plants have scientific and common names. Visit the library to further research the plants used in this activity, their habitat preferences and their human uses. Expand on the activity to include different plants and animals that would be found in the habitat you are restoring on your school grounds.

Reference: Earth Partnership for Schools, "Botany Bouquet," *Study the Model 1-3*. Univ. of Wisc., Madison Arboretum. Adapted excerpt used with permission.

WORM LIFE CYCLE

AGES

7-10 years old

CONTRIBUTED BY

Education Outside
San Francisco, California, USA
www.educationoutside.org

In this lesson, students examine worms at different life stages and diagram each stage. Students will learn the concept of life cycles and produce an accurate drawing of each stage of worm development.

MATERIALS

- Worm bin with worms
- Diagrams of worm life cycle and worm anatomy
- Containers
- Magnifying glasses
- Paper
- Pencils
- Crayons or colored pencils
- Clipboards

PREPARATION

- Search in your worm bin for worm eggs, baby worms, juvenile worms and adult worms, and place each in separate containers.
- Make sure there are enough pencils, magnifying glasses and paper for each student.

DIRECTIONS

- Ask students to define the word "cycle" and identify the stages of the human life cycle.
- Ask students if they know the stages of the worm life cycle. Show diagrams of the worm life cycle and worm anatomy. Ask students to note the attention to detail and labels on the diagrams.
- Break students into four groups. Have groups rotate along life cycle stations, using magnifying glasses to observe worms and start drawing their own diagrams.
- Give students time to finish drawing and labeling their detailed diagrams.
- Ask students to regroup and prompt them to share their diagrams and discuss some of the differences they noticed in the different life stages of the worm.
- For a more challenging exercise, ask students to find, identify and categorize examples of the worms' life cycle stages, themselves, instead of separating them from the worm bin before the lesson.

RESOURCES

Worm Life Cycle: *http://bit.ly/1VsCjPN*

Worm Anatomy Diagram: *http://bit.ly/1NNVnFn*

BUTTERFLY BREEDING PROGRAM

© KHAN WILSON

AGES

6-13 years old

CONTRIBUTED BY

Pelangi School
Ubud, Bali, Indonesia
www.pelangischoolbali.com

Pelangi School encourages students to learn through nature. We have developed a natural campus to which many butterflies are attracted. We planted appropriate flowers, shrubs and trees for the butterflies to feed from, lay their eggs on and for their caterpillars to eat. Through their stewardship, our students are gaining important scientific knowledge about life cycles, plants and the natural environment, while learning to respect and appreciate nature in their play and learning spaces.

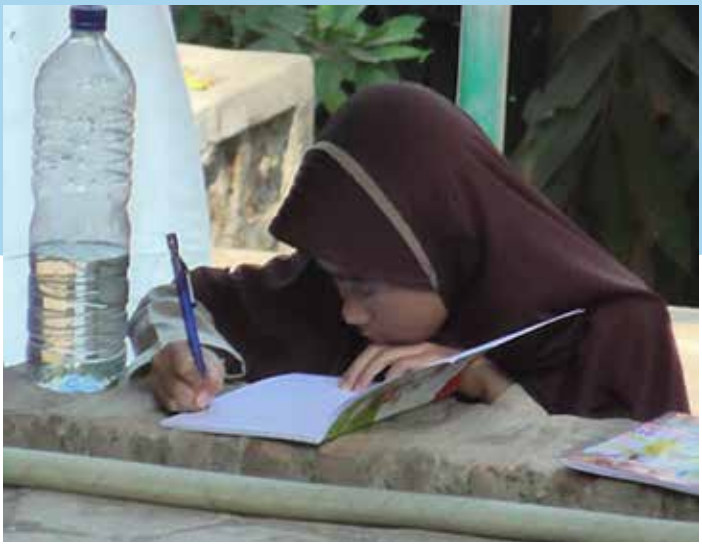
MATERIALS

- Plants, appropriate for your own local butterflies
- Bottle of water, plate, and a secure ventilated box with a transparent panel that makes the interior visible

DIRECTIONS

- Identify local species of butterflies in the immediate and surrounding areas. It is helpful to engage the help of a lepidopterist for this first step.
- Locate, observe and identify plants that butterflies use for food and laying eggs, and that caterpillars are eating. Plant butterfly-attracting plants and trees nearby. (This is essential to continue feeding hungry caterpillars.)
- Collect caterpillars/eggs with a small amount of their food source plant. Place the food source in a bottle of water and then put the bottle in the middle of a plate of water without any leaves touching the side of a secure ventilated box. The water will prevent ants from attacking the caterpillars and the box will protect them from insects such as praying mantises or wasps.
- Observe the caterpillars daily and add additional food plants as needed. Clean the box daily to deter ants, and add a very light mist of water daily to help the caterpillars avoid dehydrating. Place the box in a light-filled area without direct sun.
- In addition to caterpillars, students may also collect some butterflies in their chrysalis stage, when they are still attached to a plant stem in the school grounds. (Detaching the chrysalis will destroy it.) Put them in a secure box in the classroom to protect them from predators such as ants, lizards and praying mantises.
- After approximately 20 to 25 days (depending upon species) a butterfly should emerge. After documenting and discussing the life cycle, students can release the butterfly into the school garden and enjoy the excitement of watching it fly.
- The process becomes self-sustaining if emphasis is placed on maintaining the trees and plants that the butterflies need to survive. This enriched environment will naturally attract additional local butterflies and will improve the ecology of your neighborhood. Over time, a nature table, with a collection of found specimens, can be established to highlight the range of wonderful creatures living on the school grounds.

TADPOLE INSPIRATION



© SEKOLAH ALAM NURUL ISLAM

AGES

9-18 years old

CONTRIBUTED BY

Sekolah Alam Nurul Islam
Sleman, Yogyakarta, Indonesia
www.sekolahalamjogja.com

Observing an object or a phenomenon can help trigger students' writing abilities and become the seed of a story. In this activity, we observe tadpoles' metamorphosis into frogs and use this process as our inspiration for multifaceted learning. Students practice their scientific observation, writing and drawing skills over the course of a month-long project.

MATERIALS

- Local species of tadpoles, removed with permission from a nearby pond where they are plentiful, and/or a few local frogs to breed tadpoles to study
- Food for the tadpoles to eat, from the same source
- Clear bottles or jars
- Pen, paper and other writing tools

DIRECTIONS

- When the local pond is full of tadpoles, students catch them and put them into bottles or other clear containers to transport back to the school grounds. Once back at school, ask the students to observe tadpole activity and begin writing and drawing their observations.
- Feed the tadpoles regularly using leaves (with algae) and other plant material from their home pond. Keep the bottle out of direct sunlight and be sure to add air holes to the container, or leave the container open.
- The students can bring the bottles home to watch the tadpoles change every day. Ask them to record their written observations daily. They can also take pictures each day to record the transformation over time, or draw pictures to illustrtate what they see.
- After a month or so, the students can present their tadpole writing and pictures to one another and share what they have learned. They can also use their scientific knowledge as the basis of a creative writing project that further extends their learning. The students' writing and pictures can also be used to create an exhibit on the wall of the school for other students to learn from and enjoy.
- When the project is complete, the young, healthy frogs can be returned the same pond where they were found.
- NOTE: If the class is observing tadpoles that you have purchased, DO NOT release them into the wild at the end of the activity. Frog populations are very sensitive and introducing non-native frogs can harm local ecosystems.

HOLD AN AMPHIBIAN!

© FRIENDS OF NATURE NEPAL

AGES

12-16 years old

CONTRIBUTED BY

Friends of Nature (FON) Nepal
Kathmandu, Nepal
www.fonnepal.org

This activity takes an enjoyable, hands-on approach to educating students about amphibians. Connecting biology to a memorable experience helps to solidify the lesson. Globally, frogs are endangered and it is important to educate children about their conservation. Urban children presume all amphibians are poisonous, which is untrue. Catching an amphibian is challenging and is also good exercise. This is easier if there's a river or pond near the school.

MATERIALS

- A pair of wellingtons (rainboots) for each student
- Measuring scale (ruler), notebooks and pens
- Camera

DIRECTIONS

- Form two groups with 15-18 students each and an educator. Teach the class about amphibians, their status, diversity, life history, ecological significance, threats, conservation issues and "what we can do?" before moving outside.
- If there's a river or pond in or near the school grounds, that will be the primary study location. Frogs spend the majority of their time near water but also live in a variety of habitats: leaf litter, bush, forest, farm land, artificial refuges, etc.
- In a pond or nearby river, the educator of each group will walk down to the water's edge and look for frogs. Upon detection, he/she will slowly immerse both hands laterally and try to catch the amphibian. The frog might escape several times, so it requires patience for success.
- The hand held amphibian is identified first by the expert, and then their body length (in mm) is measured (snout-to-vent) using a measuring scale. The frogs will be observed closely and handled by students.
- Students can easily distinguish between frogs and toads upon touching: frogs are slippery due to their huge dependence on water while toads have warts and dry skin as they visit water bodies less. Frogs also have long hind legs which allows them to jump far, in contrast to toads' shorter hind legs.
- Now it's the students' turn to catch their own amphibian! Each student will note the type of habitat it was found in as well. Students will write their own observations about their frog's color, pattern, body structure and activity. They can take pictures to help remember the specific attributes and identify the species of frog later.
- Upon returning to the classroom, the two groups can collate the information they obtained in order to measure and describe the diversity of amphibians in the area.

Note: Amphibians are cold-blooded animals and depend upon external temperature for functioning. They hibernate in winter and come out with the onset of rainfall. Thus, this activity should be carried out during summer or when there's plenty of rainfall.

THE MAGPIE GAME

© NATURSKOLAN I LUND

AGES

6-10 years old

CONTRIBUTED BY

Naturskolan i Lund
Lund, Sweden
www.lund.se/naturskolan

This curriculum-connected, wildlife-oriented game gives students an understanding of the competition birds and other wildlife face from one another as they gather the resources they need from the environment. It also teaches students about strategy ("Where should you place your nest so others don't pick up all of your sticks?") and basic mathematical concepts and terminology used to describe the outcome of the game (e.g. "fewer sticks" vs. "more sticks"). This game also involves a lot of running and gives the children exercise as they learn academic concepts.

MATERIALS

- A large number of sticks, gathered with permission from the school grounds or other free, local source. We recommend that you gather enough sticks for each "magpie couple" to begin with 20-50 small or medium sized sticks for their initial "nest". If you don't have a natural area onsite, distribute the sticks over a wide area of the school grounds before beginning the game, so the "magpies" will be able to "forage" for them.
- It's often easiest to acquire a large number of sticks when the shrubs and trees on school grounds are pruned. Make arrangements with the maintenance department for the school, or a local park, to save the sticks for you when they do their pruning work.
- Prepare some colored string, in a wide variety of colors, in short lengths the children can use to tie to selected sticks. You will need five pieces of string per "magpie couple", in a different color for each couple.

DIRECTIONS

Start the game by letting the children form "magpie couples", pairing off into groups of two. Each magpie couple should decide how many sticks they believe they can collect in one minute and then tell the others what they think. Start the clock and let the magpies "fly out" and collect as many sticks as they can. When the minute is over, the children count their sticks. What is the result? Did they fetch a higher or lower number then they thought? Double, half, a third, less and so on. Practice different mathematical words.

Each magpie couple should now build a nest of all the sticks except five nice sticks that they mark with a piece of colored string. Build the nest like a circle big enough for the magpie couple to sit or stand inside. The magpies should now fly to the other nests to steal the marked sticks and put them in their own nest. They are only allowed to take one stick during each flight. No magpie is allowed to stay in the nest to protect their own sticks. The teacher will decide when the flight is over, and this will also be the time to count the sticks again. How many marked sticks are in the nests now? Did the number increase or decrease? What strategies did the couples chose to build their nests? Once again, use mathematical words to discuss what happened.

CONNECTING URBAN BIRDS AND CLIMATE

© ELIZABETH BABALOLA

AGES

14-18 years old

CONTRIBUTED BY

Elizabeth Babalola
Nairobi, Kenya

This hands-on, outdoor science activity will help introduce students to their local built and natural environments, and deepen their interest in local bird species. Over the course of a two week period, students will collect precipitation and bird data and then follow the steps below for a culminating activity that encourages critical thinking and collaboration. The goals are to: familiarize students with birds in their local neighborhood; help students practice scientific data collection, documentation and online research; and demonstrate and develop critical thinking, collaboration, self-reflection and presentation skills. The activity is equally suitable for a high school science class or an after school eco-club.

MATERIALS

- Rain gauges (one for each chosen location)
- Writing tools
- Field guides with information about local bird species and/or access to a local bird expert (optional)

DIRECTIONS

PART I – RESEARCH

- Begin the project by contacting a local bird expert and asking him/her to speak with the students about the birds in their neighborhood. It's also helpful for the students to study local field guides and to use online resources such as eBird. (*www.ebird.org*)
- Scout locations for birding on school grounds or in the neighborhood, and assign two groups of three or four students to each location. Set up a rain gauge in each place.
- Ask students to collect data over a two week period before the culminating activity. They should make a minimum of two weekly trips to each location to observe and record data about bird sightings. The groups can alternate responsibility for recording precipitation data.
- Ask all students to make detailed observation notes and sketches, and to take pictures of the birds they see.
- Using information from national and regional bird experts, bird books and online research, students will then identify the birds they observed, and research their migratory patterns and behavior.

PART II – ANALYSIS AND REFLECTION

- Each group will use the information they gathered in the field to create a short summary presentation about their findings, and then share them with their classmates. Each presentation should include slides that describe the birds they saw, their identifying characteristics and the bird behavior they observed.
- Ask the groups to also share their precipitation data for each location, and to compare this to the weather forecast. They can hypothesize about differences they find (if any) and engage the class in a discussion. The students can also hypothesize about relationships between precipitation data and bird data, and include this in the class discussion.
- Ask the students to upload their findings to the eBird website, to make this information available more widely.
- Students may be assessed on the quality and content of their presentations, the quality of the data collected by each team, their levels of individual and team participation in discussions, and their ability to make connections between bird and weather data.

Schoolyard Agriculture and Food

In our increasingly urban society, people of all ages have become disconnected from the natural and agricultural environments that sustain us. Starting a school garden is one way to reconnect students and school communities with local agricultural and ecological systems and to create new, vibrant, hands-on learning environments at the same time.

HORTICULTURAL SKILLS Culinary gardens are cost-effective, hands-on learning spaces for studying natural science, botany and horticultural techniques. Gardens are commonly used to teach lessons on topics such as soil, weather, plant growth, insect life cycles and decomposition.

CURRICULUM CONNECTIONS School gardens can also be springboards for topics in many disciplines. They help bring social studies and history lessons to life, and provide engaging settings for teaching arithmetic and geometry, health and nutrition, art and music, reading and foreign languages.

SHARING FOOD Edible gardens give students of all ages insight into where their food comes from, what it takes to produce it and the art of bringing it to the table in an enjoyable manner. Preparing and sharing food in the schoolyard is easier to do if schools build informal outdoor kitchen spaces with ovens or barbeques, sinks and picnic tables.[1]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

CREATE A BEAN TEEPEE PLAYHOUSE

© SHARON DANKS

AGES

2-10 years old

CONTRIBUTED BY

Bay Tree Design, inc.
Berkeley, California, USA
www.baytreedesign.com

Bean teepee playhouses are inexpensive, creative play elements that enhance school grounds for young children by providing a setting for their imaginative games that is cozy and inviting, and easy for adults to supervise. These simple structures can be built in a very short amount of time, are inexpensive and are straight forward to assemble. They can be planted directly in the ground or use large, sturdy pots for support.

MATERIALS

- Five to ten sturdy bamboo poles at least 8' in length (3 m) and 1"-2" in diameter (3-5 cm). If planting in containers on a paved school ground, also purchase one large, sturdy pot or planter for each bamboo pole and fill them completely with rich potting soil.
- Edible bean plants that are vigorous climbers such as: scarlet runner beans (with lovely red flowers and large, tasty bean pods), pole beans (generally with white flowers and smaller pods), or other climbing plants. Purchase enough seeds or seedlings to have four to six plants per bamboo pole.
- Additional plants to enliven the base of the teepee or fill the surface of the pots, such as: nasturtiums, sorrel, lettuce, or other leafy and flowering edible plants.
- Twine to tie the bamboo poles together at the top and to attach the vines to the poles as they grow.

DIRECTIONS

- Find a suitable location for the bean teepee playhouse in an area that receives some sun to help plants grow. Check to make sure this location is also away from ball games, so children who are engrossed in creative play will not be disturbed by flying balls.
- Mark a rough circle on the soil or grass—or arrange large pots to form a circle—big enough for 2-4 children to sit comfortably inside.
- Gather bamboo poles together. Wrap a piece of sturdy twine around the top of all of the bamboo poles, roughly 1'-2' (0.3-0.6 meters) from one end, to hold them together loosely.
- With several people working together, spread the poles out to form a cone shape, with the twine-wrapped end at the top. Place the bottom ends of the poles at least 2' (0.6 meters) into the soil or to the bottom of the large pots that will serve as their base. Pack the soil down around the poles quite firmly and check to make sure that the structure is secure.
- Plant bean seeds or seedlings around the base of the poles. Add additional flowering, edible plants to fill the tops of the pots or enliven the area at the base of the poles.
- Water regularly. As the plants grow, tie the vines to the bamboo poles to give them support until they are well established.

PLANT, GROW AND HARVEST A "NIBBLING GARDEN"

© SHARON DANKS

AGES

4-10 years old

CONTRIBUTED BY

Bay Tree Design, inc.
Berkeley, California, USA
www.baytreedesign.com

Edible gardening is very popular on school grounds throughout California and around the world. Many schools have a school garden where students participate in the process of growing nutritious food, and classes work on hands-on curriculum activities of many types. In the San Francisco Bay Area, some schools are extending their horticulture programs by creating small "nibbling gardens" intended to engage children in their free time during recess. The value, beyond nutrition, is the learned skill and expertise of knowing what types of food are edible in one's environment and when they are at their delicious peak of ripeness—in other words, teaching the concept of seasonality. Nibbling gardens work best as an extension of a school's curriculum-tied gardening program, after students have already been given some background in plant identification and understand the basics of plant growth. Since children engage with these gardens on their own, all plants in a nibbling garden must be edible.

DIRECTIONS

- Choose a sunny spot with clean soil or someplace you can place food-grade planting containers. If using containers, be sure to select materials that are safe for growing edibles. For example, you can illustrate material reuse by reusing containers from local food industries such as wine or olive barrels. Many schools in our region also use sturdy new containers such as galvanized steel stock tanks. Do not use tires, pressure treated lumber, or other potentially hazardous materials.
- If planting in the ground, amend the soil with organic compost. If planting in containers, fill them with organic compost and potting soil.
- Start the nibbling garden by planting seeds or seedlings of robust edible plants that will produce food that students can harvest and eat on the spot during the school year.
- Adapt this list for your own local region and microclimate to teach students about the special edible plants that are grown in your part of the world.
- Water, weed and eat!

PLANTS THAT GROW WELL IN NIBBLING GARDENS IN THE SAN FRANCISCO BAY AREA INCLUDE:

- Blackberries (*Rubus spp.*)
- Borage flowers (*Borago officinalis*)
- Fava beans (*Vicia faba*)
- Grapes (*Vitis spp.*)
- Lemon balm (*Mellisa officinalis*)
- Nasturtiums (*Tropaeolum spp.*)
- Raspberries (*Rubus idaeus* and others)
- Scarlet runner beans (*Phaseolus coccineus*)
- Snap peas (*Pisum sativum* var. *macrocarpon*)
- Sorrel (*Rumex acetosa*)
- Spearmint (*Mentha spicata*)
- Strawberries (*Fragaria spp.*)

UNDERGROUND STEMS TELL THEIR STORIES

© ABRUZZI SCHOOL GARDEN PROGRAM

AGES

12-16 years old

CONTRIBUTED BY

Abruzzi School Garden Program
Siankhore, Baltistan, Pakistan
abruzzischoolgarden.com

This lesson was created for tenth graders who were learning about underground stems. Their biology teacher divided them into four groups and had each group plant one underground stem per group and make observations as the plants grew. Instead of writing only about the plants' biological properties, the students also wrote stories with illustrations pertaining to basic scientific data or they wrote entirely fictional stories. Most of the students chose to write stories that in very subtle ways describe the prevalent culture of their region—Shigar—viz a viz Shigris and young people like themselves elsewhere. Indirectly these stories became a social studies lesson, recording social history via the prism of plant life.

MATERIALS

- Outdoor planting area, such as a raised bed or small planting container with potting soil, that can be placed in any sunny, well-ventilated part of the school
- One pod of garlic, ginger, onion and/or potato per group
- Drawing journals or paper for each student, plus colored pencils or any coloring medium you choose

DIRECTIONS

- Divide the class into four groups.
- Ask each group to choose a stem (garlic, ginger, onion or potato) to plant and observe over time. Ask the students to watch the growth of these underground stems over the course of several weeks or more, and instruct them to spend time researching the biological, physical and cultural properties of their vegetable.
- Ask students to use their research about their plant to develop a story about it. Stories can be written in their native tongue or in a foreign language they are studying. This writing activity can be directed toward factual information about their scientific findings or students may be given the option to write a fictional piece, loosely based on their observations.
- Encourage students to illustrate their stories, transforming the vegetables into talking, hearing, seeing, feeling characters.

INSPIRING SPEAKING AND WRITING IN YOUR SCHOOL GARDEN

© CITYSPROUTS

AGES

5-10 years old

CONTRIBUTED BY

CitySprouts
Cambridge, Massachusetts, USA
www.citysprouts.org

A school garden can provide great inspiration for students' writing. When teaching a unit on living things, ask students to make lists of things in the garden that are living, not living or dead. This initial question can lead to interesting conversations which can develop into proper science discussions.

The next part of the activity is for each child to choose a plant in the garden to study over time and think about questions of dead versus alive. Discussions can also look at how living things respond to the environment such as changes in the weather. Visiting the garden weekly means that students can continue to observe, sketch and collect data on the changes they see.

Some questions to ask the students include:

- What do plants need to grow?
- Is that the same for other living things such as animals or you and me?
- What happens to the plants if it doesn't rain for a while?
- What happens to the plants when the sun shines?
- What can you do to make a difference to how well things grow?

Other literacy activities in a school garden might include descriptive writing, solving puzzles and word-searches, but the most important thing is for students to engage with the environment and in real-world applications of the skills they are learning in language, in the arts or mathematics.

© SHARON DANKS

GUERRILLA SUNFLOWER GARDENING DAY

© ZAHRA ALI HUSAIN

AGES

7-17 years old

CONTRIBUTED BY

Crops in Pots
Karachi, Sindh, Pakistan
www.facebook.com/cropsinpot

As freelance gardening teachers, we encourage all schools and individuals to participate in this wonderful activity on May 1st each year. The idea is very simple. Plant sunflowers on any empty piece of land, an unclaimed plot, a neglected container, around your school, in a public park, in short just anywhere!

Why sunflowers? Sunflowers are not only loved for their bright and vibrant colours, they are also valued for their ability to improve the ground soil by acting as a green manure and by suppressing weed growth. The stunning flower is rich in nectar and pollen that attract beneficial insects, especially butterflies, and improves bee forage in the summer. A single sunflower plant looks just as striking as when these massive flowers are bunched together in a group. The best part is that sunflower seeds are an excellent source of Vitamin E.

Since sunflowers are native to Pakistan, seeds are very cheap and available in most general and horticulture stores. Sunflowers are drought resistant which makes them ideal for Karachi. And birds love to eat them.

MATERIALS

- Heirloom sunflower seeds or seedlings
- A watering can
- Some tools and gloves
- Organic compost

DIRECTIONS

- Arrange a trip to a public park with your students or select any other location, such as your school grounds, for your activity.
- Let your students pick the spots where they want to see a giant sunflower grow in the future.
- Students can carefully dig a hole and transplant their seedlings or simply sow seeds 0.5” (1 cm) deep. Encourage the students to water them softly with a watering can. Return to provide additional water to the sunflowers as needed.

Thoughtful Use of Materials

Everything a school chooses to include in its environment says something about its values. Over the last few decades, as the green building movement has grown, many schools have started to question conventional playground materials—asphalt, concrete, stainless steal, plastic and rubber—that are widely used. Schoolyard landscape features designed using sustainable, natural and recycled building materials demonstrate green building practices to the school community and can reduce the school district's costs and impact on landfills and other urban infrastructure.[4]

NATURAL MATERIALS Living plants, wood, bamboo, straw, stone, sand, clay, adobe, snow and other natural materials are teaching tools for lessons about environmental stewardship and time-tested building techniques that are still relevant today. They lend themselves well to artistic expression and cultural connections, and to community participation in schoolyard construction and stewardship.

RECLAIMED AND RECYCLED MATERIALS Using salvaged materials on school grounds diverts bulky waste from landfills and recaptures the remaining value of the materials for further use. It reduces the need to mine, harvest, process and transport new materials, which in turn, saves additional energy and effort, and preserves environments at the extraction source.[3]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

USING SAND AREAS TO BRING IDEAS TO LIFE

AGES

3-6 years old

CONTRIBUTED BY

The Anak Atelier Preschool and Kindergarten
Ungasan, Bali, Indonesia
www.theanakatelier.com

Sand intrigues most of us and it is well suited to the hands-on and imaginative nature of young children. Building on this natural interest is easy and because sand is open-ended, the child is able to determine the direction of his/her exploration. The teacher's role in this experience is to provide a framework that enables the child to extend their learning. This is done in two ways: setting up an environment and asking open-ended questions. Our school has used our sandpit as a tool to explore ideas and science related to volcanic eruptions in our region, making complex concepts accessible to young children.

MATERIALS

- Sand area with rocks and other loose natural materials
- Water, supplied from a hose or buckets
- Digging tools

BACKGROUND

In August 2015, Bali was affected by the eruption of a volcano in the East Java province, and again, three months later by the eruption of another volcano on the neighbouring island of Lombok. Our children were fascinated by how a "mountain with a hole that breathed fire" could stop airplanes from flying, and they wanted to find out more.

This prompted the teacher to instigate a science experiment using baking powder and vinegar, so the children could see for themselves what a volcano eruption might look like. The children crafted designs on paper first, using triangle shaped objects and then built a 3D version in the sandpit that they would use for the eruption experiment. It was truly inspiring to observe the children use their knowledge about volcanoes acquired from the science experiment to re-enact the experience in their sandpit exploration.

When children are actively involved in their own learning, they are able to build upon their own existing repertoire of knowledge and skills. This is an incredibly powerful way of igniting a passion for learning and discovery at a young age.

DIRECTIONS

- To explore the power of volcanoes, set up a simple provocation in the sandpit, using a hosepipe with running water, digging materials and some rocks. Ask the children to build a "volcano" in the sand, based on what they have seen or studied. Encourage the children to build "houses" and other things around the volcano.
- Fill the crater of the volcano with running water from a hose or bucket. Watch the water flow out of the crater and down toward the houses. Ask the children to talk about what they observe to be happening as the water flows downhill.
- At our school, the children realised that when "lava" comes into contact with other things it destroys them. Together, they came up with the very logical conclusion that "lava breaks down houses". Transferring and adapting what they have learned from one context to another is a significant part of children's development, and to see it in action, led so confidently by the children themselves, was a wonderful thing to witness.
- What you decide to add to the sandpit will depend on what you are studying. For example, if an inquiry is focused on animals and dinosaurs you might add models and other loose natural materials. If the provocation is centred on mark-making and patterns, you may choose to add sticks, brushes and forks.There are many ways to creatively use a sand area, just let the children show you the way!

SCULPTING SOIL BALLS *(ENTHO-ENTHO)*

© SEKOLAH ALAM NURUL ISLAM

AGES

6-18 years old

CONTRIBUTED BY

Sekolah Alam Nurul Islam
Sleman, Yogyakarta, Indonesia
www.sekolahalamjogja.com

Playing with soil has many health benefits and learning opportunities. Mixing water with soil in different ratios allows students to experiment with 3D shapes and become inventors. This activity improves the understanding and designing of 3D forms of all types. Children seem to most enjoy making soil into round balls of various sizes. This activity is equally adored by both girls and boys of many ages, and can be incorporated into academic lessons or enjoyed in the students' free time outside.

MATERIALS

- Soil with soft, fine particles and high clay content, if possible
- Water and cups
- Half-pipe material, such as bamboo, cut in half lengthwise (optional)

DIRECTIONS

- Collect some soft soil from the school grounds and make cups of water available to students.
- Show students how to add water little by little to the soil with their bare hands, and to feel how much water is needed, until they produce a stiff batter similar to modeling clay.
- Ask students to shape the soil into a ball as big as their fist, and try to make it as round as possible. Students can also compete to make the biggest or roundest ball.

EXTENSIONS

- The teacher can help students to make a track using a half pipe or piece of bamboo that has been cut lengthwise. This will serve as a race course for the finished balls.
- Suggest that the students arrange the tracks in a sloping position, and experiment to find the best angle for rolling their balls. (We find that arranging the track with at least a 30° angle will allow the balls to roll freely.)
- The tracks can also be used to test how round the balls are. Children may set up longer tracks for their balls and experiment further during class or their play time. They can also simply roll the balls on the ground.

COMPOSTING WITH WORMS

© SHARON DANKS

AGES

5-18 years old

CONTRIBUTED BY

Ramona Winkelbauer
Washington, DC, USA

This activity is a "classroom scale" exploration of how worms turn organic materials into mature compost. After dividing into groups, students develop different "recipes" to explore and identify the best combinations of materials to create rich compost. Students will discuss how the mixtures were fast, slow, or resistant to vermicomposting and analyze the number of worms present at the end. The most successful "recipes" may be used to continue composting at a larger scale, if desired.

MATERIALS

- Pint or quart carryout food containers with lids, to use to develop vermicompost*
- Small, clear glass or plastic jam jars, with lids, to compare the finished vermicompost*
- Local soil
- Shredded paper or newspaper, used as bedding material for vermicomposting
- Leftover food materials such as apple cores, kitchen food waste, coffee grounds, etc. It's best to avoid using meat or milk products, or oily food waste, due to the odors they produce when decomposing.
- Water
- Worms: red wigglers (*Eisenia fetida*), redworms (*Lumbricus rubellus*) or local earthworms
- Plastic covering to count/evaluate contents of containers

* = washed to remove food and soap residues

DIRECTIONS

- Divide students into groups to share a vermicompost container. Request that each group put six to eight holes in their container's lid to allow air to reach the contents.
- Ask each group to suggest ratios of soil, organic leftovers, bedding materials and worms to put into their container, and then guide them in preparing their container according to their pre-determined ratio. Students then use water to moisten the shredded newspaper until it is lightly saturated.
- Put the containers in a dark place or make paper enclosures to create a darkened environment. Leave the containers undisturbed for four to six weeks and then examine them.
- Ask each group to open their container onto tables covered with plastic and count the number of worms. Each group should also examine the resulting compost, put a sample into a jam jar, and label the jar with their group's name.
- Pass the jars around for everyone to see, and compare similarities and differences in the final product. Ask the groups to report their final number of worms and evaluate the quality of their compost. Explore which reciped worked the best, which did not work well, and identify how the recipes can be improved.
- Note: The ratio "recipe" we find most useful includes: 1"-2" (2.5-5 cm) of bedding; 1"-2" (2.5-5 cm) of soil; food byproducts filled to 2" (5 cm) below lid level; and three worms per pint (0.5 L) or six worms per quart (1 L). Experiment to see what works best for you!

BURY IT!

© ENVIROSCHOOLS

AGES

4-10 years old

CONTRIBUTED BY

Enviroschools
Hamilton, New Zealand
www.enviroschools.org.nz

This intriguing way to explore waste in your school community involves burying pieces of everyday waste. Decomposition is the breakdown of natural materials by the action of insects, worms, fungi and bacteria. Decomposition is a natural biological process which replenishes the Earth, *Papatūānuku*. By monitoring changes over time students will discover which things are biodegradable and which aren't. This will help the school community to think about the effects of landfilling, and how long different types of waste will persist in our environment.

MATERIALS

- Waste materials collected from the school
- An area of your school grounds to bury the waste
- A sheet to record your observations
- A set of scales
- Ice block (popsicle) sticks
- Gloves

DIRECTIONS

- Using gloves, collect different pieces of waste from school ground bins, or from students' lunch boxes. Try to find at least one example of each of the following materials: glass, metal, plastic, paper, food and food packaging.
- Ask students to work in small groups to take a piece of waste, weigh it and record their observations. Combine this information in a class chart to record: the name of each piece of waste; individual predictions about which pieces are biodegradable and non-biodegradable; and how long each piece will take to break down.
- Select a place in your school grounds where you can dig small holes to bury your waste materials. Bury the waste in the soil. Be sure to take photos before you fill the holes. Use ice block (popsicle) sticks to mark where each piece of waste is buried.
- Dig up your waste each week and record the results looking at changes in shape, colour, texture, weight and smell. ☺ Use a magnifying glass to look around the waste and identify which organisms are helping to decompose the waste materials.
- Note: Over the four weeks, water the soil to keep the area damp.

REFLECTION QUESTIONS

- What was the result of burying different pieces of waste? What do you think is needed to help break down waste?
- What makes good *kai*/ food for *Papatūānuku*/ our Earth Mother? What would cause her indigestion?
- How many generations will it take for some of your waste items to break down? What changes could you make to your lunch box?

SEED-RAISING WITH PAPER POTS

© KYLIE MOSES

AGES

4-18 years old

CONTRIBUTED BY

greenED
Sunshine Coast, Queensland, Australia
www.greenED.com.au

In this activity, students learn how they can re-use household litter to make pots for edible seedlings for their home or school garden. This activity works well as part of a lesson about waste reduction, botany, horticulture or nutrition.

MATERIALS

- Per child: 1 toilet paper roll; 1 piece of A4 paper or newspaper[i]; herb or vegetable seeds[ii]; ½ cup garden soil or shredded recycled paper
- Per group of 4 children: Permanent marker; small cup-sized plastic container[iii] to scoop soil; medium (1 L/1 qt) plastic container with lid (e.g. from yoghurt or ice cream); plastic drink bottle with lid for watering.

Notes about materials:

i. Glossy and coloured paper and coloured inks are not recommended for use in edible gardens since they may contain heavy metals and other chemicals.

ii. If possible, collect seeds from dried seed heads or fruit of existing plants. Dried pulses (beans, soy beans, lentils, chick peas) soaked overnight will also germinate.

iii. Children can bring plastic litter items from home, or find these containers in their school lunch litter.

DIRECTIONS

- Divide children into groups of four.
- Ask each group to select seeds to plant and put them on the lid of the 1 L plastic container. Use permanent marker to write children's names and seed type on the lid, and then place it under the container (like a saucer).
- Place the toilet paper roll at the short edge of the paper, 1 cm (½ inch) from the top, and roll it up. Tuck the top ends in to make an opening, then push the lower ends in to make a base. Trim lower ends if necessary.
- Using the small plastic container, scoop the soil into the toilet roll pot. Place four pots into a medium plastic container and dribble water through the semi-closed lid of a drink bottle (opening the lid slowly regulates the flow). Check to see if more soil is needed after watering.
- Ask each child to plant a seed in their pot, just under the soil's surface. Dribble water again, checking that the seed remains covered and only a little water is in the base of the medium container.
- Place all of the containers outside, sheltered from wind and heavy rain. Ask the children to check their seeds every day to ensure that the soil remains moist.
- Once the plants have grown more than four leaves, soak the pots in water briefly, and then place them directly into school garden beds or larger recycled containers or boxes. Open the base of each pot before replanting, so the roots can grow out into the larger garden bed.

Community Engagement

School grounds are unique public spaces. They are community resources that are fully occupied during the school day—but may also be used when school is not in session to enhance the well-being of residents in the local neighborhood and the surrounding community.

FESTIVALS AND SPECIAL EVENTS School grounds can be venues for school-related public events that draw parents and family members further into their child's education and invite the community to participate in life at school.

JOINT USE Some school grounds become part of their city's public park system after hours, providing access to green space and recreation for students and other members of the local community when school is not in session.

COMMUNITY STEWARDSHIP The process of building and sustaining green schoolyards connects communities to place, and helps to engage students, teachers, staff, parents, neighbors, businesses, nonprofits, public agencies and others in collaborations to care for and improve their school grounds. This cooperation reinforces interdependence and local self-reliance, and builds a "sense of community" while creating useful, beautiful school environments at affordable prices.[3]

ACTIVITIES IN THIS CHAPTER

OTHER RELATED ACTIVITIES

MAY DAY CELEBRATION

AGES

4-18 years old

CONTRIBUTED BY

Children in Nature Collaborative
San Francisco Bay Area, California, USA
www.cincbayarea.org

Maypole dancing is part of a lively celebration of spring. It can include simple circle dances for younger children, and gain increasing complexity for children in older grades. Older student ensembles can also play music to accompany the dancing. The Maypole is a tradition going back to the 16th century in Europe—originally a decorated tree set up on May 1st that was often part of a village festival.

MATERIALS

- One 12'-15' (3.5-4.5 m) tall pole, 3" (8 cm) diameter
- One 18" (45 cm) diameter round wooden disk (for the top of the pole) and a 6" (15 cm) carriage bolt to attach the disk to the top of the pole.
- Twenty four 2" (5 cm) bolts with accompanying flat washers, spring washers and wing nuts to attach the ribbons to the wood disk.
- Twenty four colorful ribbons made of cotton or satin cloth, 25'-30' (7-9 m) long and 4" (10 cm) wide—in two contrasting colors or a variety of colors (rainbow). Attach sturdy grommets to both ends of each ribbon.
- A piece of plastic or metal pipe, 3'-4' (1-1.25 m) long and 5" (13 cm) wide, to insert in the ground to hold and stabilize the vertical pole.
- A basket with a flower bouquet, to place at the top of the Maypole. Wire to attach the basket to the pole.

DIRECTIONS

- Preparation before the May Day Celebration: Dig a narrow, 3'-4' (1-1.25 m) deep hole in the ground with a post-hole digger and insert the pipe vertically, to provide a sleeve that will support the tall pole.
- Day of the celebration: Attach ribbons to the wooden disk that will go on top of the pole and anchor the disk to the pole using the carriage bolt.
- Install the tall wooden pole by placing it into the pipe sleeve in the ground. Use two to three people to lift and place the pole into the sleeve in the ground.
- Using a tall ladder, attach the flower basket to the disk on top of the pole using wire.
- Spread the ribbons out around the pole. Use bamboo sticks, placed through the grommets at the ends of the ribbons, to hold them in place until the dancing begins.
- Begin Maypole dancing! Younger grades start first with simple dances and older grades continue with more intricate weaving. Traditional Maypole dances result in creating different types of ribbon patterns down the length of the May Pole. Dances include: Circle Dance, Barber's Pole, Spider's Web and traditional Single Braid.
- For more information about Maypole traditions and Maypole dances, please visit this website: *http://bit.ly/1NaV8nm*

THE BIG SCHOOL GROUNDS FESTIVAL: THE COMEDY STAGE

© LEARNING THROUGH LANDSCAPES

AGES

5-18 years old

CONTRIBUTED BY

Learning through Landscapes
Winchester, England, UK
www.ltl.org.uk

In the United Kingdom in June 2014, schools took part in The Big School Grounds Festival to celebrate National School Grounds Week. To help them with their ideas, Learning through Landscapes created a range of resources on different themes. Here we share some of our comedy ideas.

MAKE 'EM LAUGH

- Performing comedy pieces in the outdoors is a wonderful experience, but does carry a few challenges.
- Decide on your performance area early in order that any rehearsals indoors can reflect the actual space you have available outside. There is nothing worse than children huddled together when there is a lot of the stage available to use. Solo performances need to make good use of the space without leaving the performer out of breath!
- Sound is often an issue, so do a few test runs to make sure that the voices/sounds that need to be heard can carry effectively to all the seats. Also think about your backdrop and how you will orient your stage. Having your audience facing into the sun is not a good idea so think about that when you select your location, and plan accordingly for that time of day.
- Visual comedy can be particularly good for younger children whilst older children can discuss why the work of some comedians is controversial. You may want to find extracts from comic plays for children to perform, or ask them to work on examples from their favourite TV programmes. Parody can also work well so they could look at a programme that is not a comedy, and then look at ways it could be parodied.
- A comedy show might include sketches, stand up, extracts from a Shakespeare play, physical comedy or even comedy songs.

PUPILS CAN PARTICIPATE IN MANY WAYS

- Design and make costumes
- Direct or be stage managers
- Design and build scenery
- Manage the technical aspects of the production such as lighting and sound, or video and audio recording
- Write scripts
- Produce an accompanying sound track
- Produce programmes and write reviews for the local media, school website or magazine
- Set up a micro-enterprise (door charges, drinks, etc.)

SCHOOL GROUND CELEBRATION SONG

AGES

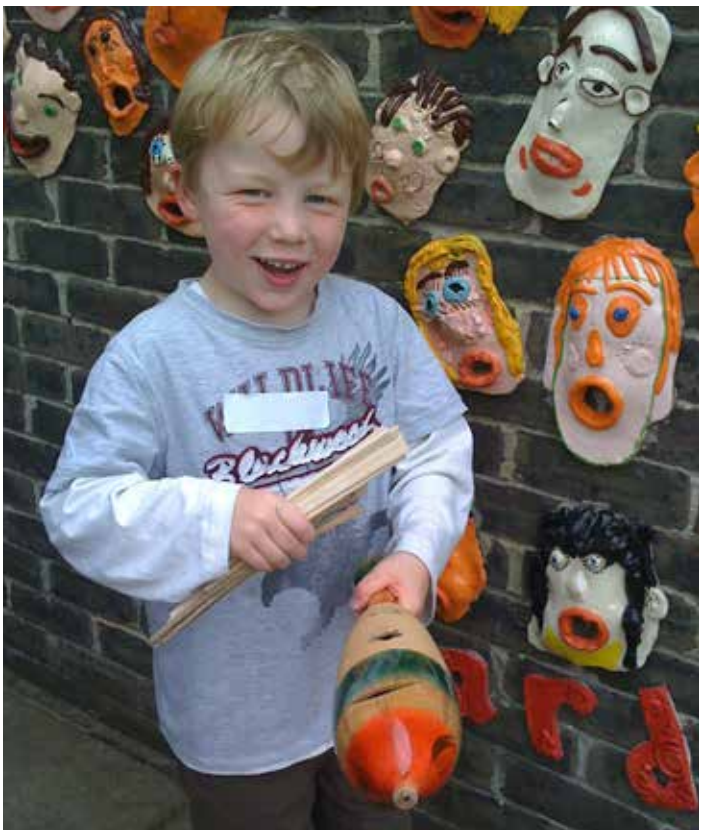
5-10 years old

CONTRIBUTED BY

Play Learning Life
Winchester, England, UK
www.playlearninglife.org.uk

For this activity pupils can work individually, in small groups or as a class. Different pupils or classes might do different things. For example, one class might come up with the ideas, another write the words and another write the tune. One group might create images to illustrate the song and another group might perform the final song, perhaps with another group accompanying it on instruments made from items found in your grounds.

Think about where you might perform a song in your grounds and who might listen to it. It could take the form of a procession around your grounds or be performed in one place with an audience listening to your performance. You could create actions or a dance for your song, too. You might even record your song with photographs, drawings or other images used to illustrate it.



DIRECTIONS

Start by thinking about all the things that are great about your school grounds—create a list of these. Here are some things you might include:

- What you see when you arrive in your school, or as you look out of the window
- Features in your grounds, such as a special tree or pond
- Things you do outside, maybe what you do at play times or during lessons
- What you and your friends do outside, what games you play together

Use these ideas to put together phrases, then lines, then verses for your song. You can then create a tune for your song, using instruments to accompany your piece. Decide where you are going to perform your song and you might even record it for your website.

Contributing Organizations

This school ground *Activity Guide* is the result of a fruitful collaboration between the International School Grounds Alliance and 37 organizations around the world, who each contributed a school ground activity that reflects their own organization's mission and programs. The diversity of ideas they shared will now enrich school ground programs in many countries. We greatly appreciate everyone's participation and extend our sincere and heartfelt thanks.

Abruzzi School Garden Program
Siankhore, Baltistan, Pakistan
www.abruzzischoolgarden.com

The Anak Atelier
Preschool and Kindergarten
Ungasan, Bali, Indonesia
www.theanakatelier.com

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www.artyplantz.org

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Ashland University
Ashland, Ohio, USA
www.movingtheclassroomoutdoors.com

The Carey School
San Mateo, California, USA
www.careyschool.org

Children in Nature Collaborative
San Francisco Bay Area, California, USA
www.cincbayarea.org

CitySprouts
Cambridge, Massachusetts, USA
www.citysprouts.org

Crops in Pots
Karachi, Sindh, Pakistan
www.facebook.com/cropsinpot

Earth Partnership for Schools
Madison, Wisconsin, USA
www.uwarboretum.org/eps

Education Outside
San Francisco, California
www.educationoutside.org

Ayesha Ercelawn
La Scuola International School
Santa Barbara, California, USA
www.lascuolasf.org

Environment Design Institute
Tokyo, Japan
www.ms-edi.co.jp/youho/htdocs

Enviroschools
Hamilton, New Zealand
www.enviroschools.org.nz

Evergreen
Toronto, Ontario, Canada
www.evergreen.ca

The Foundation for
Environmental Education (FEE)
Copenhagen, Denmark
www.fee.global, www.ecoschools.global

Friends of Nature (FON) Nepal
Kathmandu, Nepal
www.fonnepal.org

Fundación Patio Vivo
Santiago, Chile
www.patiovivo.cl

Green-Schools Ireland
Dublin, Ireland
www.greenschoolsireland.org

Green Schoolyards America
Berkeley, California, USA
www.greenschoolyards.org

greenED
Sunshine Coast, Queensland, Australia
www.greenED.com.au

Greenstone Design
Auckland, New Zealand
www.greenstonedesign.co.nz

Grounds for Learning
Stirling, Scotland, UK
www.ltl.org.uk/scotland

Hoang Thi Ha
Hong Duc University
Thanh Hóa Province, Vietnam
www.hdu.edu.vn/en-us

Horace Mann Elementary School
Washington, DC, USA
www.horacemanndc.org

Keitaro ITO Lab
Kyushu Institute of Technology
Fukuoka, Japan
www.keitaroito-lab-kit.com

Learning through Landscapes
Winchester, England, UK
www.ltl.org.uk

Life Lab
Santa Cruz, California, USA
www.lifelab.org

Naturskolan i Lund
Lund, Sweden
www.lund.se/naturskolan

Pelangi School
Ubud, Bali, Indonesia
www.pelangischoolbali.com

Play Learning Life
Winchester, Hampshire, England, UK
www.playlearninglife.org.uk

Pop-Up Adventure Play
Manchester, England, UK
www.popupadventureplay.org

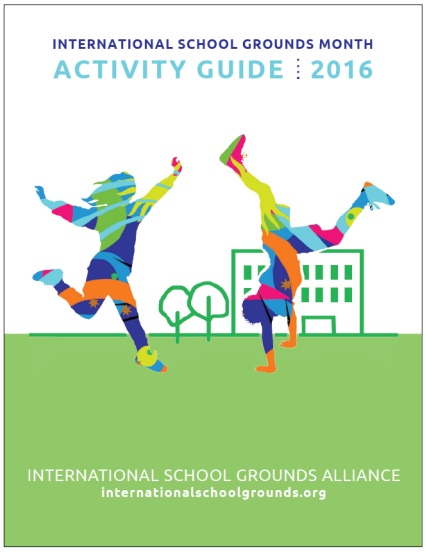
Sekolah Alam Nurul Islam
Sleman, Yogyakarta, Indonesia
www.sekolahalamjogja.com

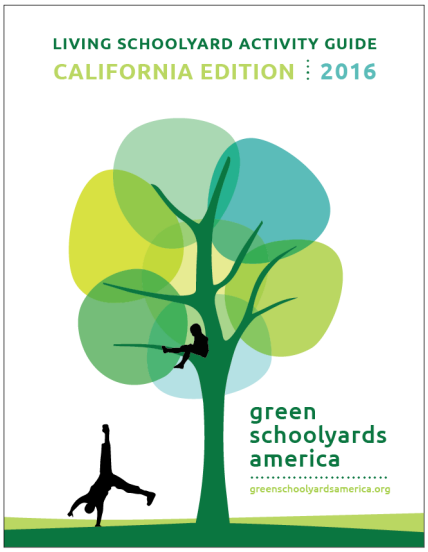
David Sobel
Antioch University New England
New Hampshire, USA
www.antiochne.edu

The Trust for Public Land
NYC Playgrounds Program
New York, New York, USA
www.tpl.org

Ramona Winkelbauer
Washington, DC, USA

Companion Publications





We hope you enjoyed the *2016 International School Grounds Month Activity Guide*! We also invite you to download a free copy of two companion *Activity Guides* produced as part of this set, by our partners at Green Schoolyards America. These *Activity Guides* share the same format and include additional school ground activities from other geographic areas.

Green Schoolyards America's *2016 Living Schoolyard Activity Guide - California Edition* includes 59 ideas for school ground activities in May, written by 54 organizations from California. The *Midwest Edition* includes an additional 38 year-round school ground activities, written by 33 organizations from the central USA, with the four seasons in mind.

We hope the wide variety of geographic and cultural contexts in this collection of *Activity Guides* will support your work anywhere in the world—during International School Grounds Month in May, and throughout the year.

INTERNATIONALSCHOOLGROUNDSALLIANCE

- *2016 International School Grounds Month Activity Guide — http://bit.ly/ISGAmay*

GREEN SCHOOLYARDS AMERICA

- *2016 Living Schoolyard Activity Guide California Edition — http://bit.ly/GSAguides*
- *2016 Living Schoolyard Activity Guide Midwest Edition — http://bit.ly/GSAguides*

COMBINED TABLE OF CONTENTS

- *2016 Combined Table of Contents for the School Ground Activity Guide Set — http://bit.ly/ISGAmay*
- Total of 147 activities from 123 organizations!

International School Grounds Alliance

The International School Grounds Alliance (ISGA) is a global network of organizations working to enrich children's learning and play by improving the way school grounds are designed and used.

THE ISGA BELIEVES SCHOOL GROUNDS SHOULD:

- PROVIDE powerful opportunities for hands-on learning
- NURTURE students' physical, social and emotional development and well-being
- REFLECT and embrace their local ecological, social and cultural context
- EMBRACE risk-taking as an essential component of learning and child development
- BE OPEN public spaces, accessible to their communities

THE ISGA DOES THIS BY:

- FOCUSING on the way school grounds are used, designed and managed
- FACILITATING a dialogue about innovative research, design, education and policy
- FOSTERING partnerships between professionals and organizations across the globe
- ORGANIZING international conferences and programs
- ADVOCATING for student and school community participation in the design, construction and stewardship of school grounds
- PROMOTING the value of enriched school grounds as uniquely positioned, engaging environments for children

The international school grounds movement is growing rapidly and flourishing in many places. Schools in dozens of countries are leading the way, finding innovative approaches that weave learning into their landscapes, diversify their recreational offerings, enhance their local ecology, and reflect their unique location and cultural context.

JOIN THE CONVERSATION

- Become a member of ISGA and receive our newsletter: *http://bit.ly/ISGAjoin*
- Attend our upcoming conferences: *http://bit.ly/ISGAconf*
- Participate in our LinkedIn Group to find the most up to date research that supports this field: *http://bit.ly/ISGALI*
- Like our Facebook page: *http://bit.ly/ISGAFBk*

The ISGA is a membership organization, bringing together leaders in the fields of school ground use, design and management. Membership is free. We invite you to join the ISGA to declare your commitment to creating and caring for these special environments that support children and young people's learning, play and well-being. Join us today by visiting *http://bit.ly/ISGAjoin*