Neurodiverse Nature-based Activities:

A Guide for preschool and primary school Teachers

Nature Diverse



Co-funded by the European Union

2025-1-CY01-KA210-SCH-000349465

Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them



Table of Contents

Cover 01

Disclaimer 02

Table of Contents 03

Welcome message 06

01 Introduction 07

A history of Nature learning 10

Benefits of Nature-Based Learning (NBL) 11

From Research Findings to Practical Guidance 12

02 Neurodiversity and Autism in Nature-Based Learning 13

Theoretical Foundations 15

How Nature Supports Neurodivergent Children 16

Regulation Through Movement 16

Predictable Natural Patterns 17

Reduced Social Pressure 17

Opportunities for Self-Paced Engagement 18

Conclusion 18

03 **Inclusion in Nature-Based Learning Environments** 19

Supporting Group Participation: Cooperative Behaviour Strategies in Outdoor Settings 21

Why Group-Based Reinforcement Fits Nature-Based Learning 21

Types of Group Contingencies 22

Ethical and Inclusive Considerations 23

04 **Nature-based learning activities** 24

4.1 Activities 25

4.2 Age group 25

4.3 Activity Structure 25

4.4 Adaptations 26

01 **Sensory Regulation Activities** 28

Level Kindergarten
Nature sound walk: Listening to the forest 29

Level Primary Education
Nature texture trail: exploring nature through touch 33

02 **Social Skills Activities** 37

Level Kindergarten
Making a Human Figure from Natural Materials 38

Level Primary Education
Tic-Tac-Toe 42

03 **Communication focused activities** 46

Level Kindergarten
Forest Explorers – Find and Tell 47

Level Primary Education
Creating Your Own Name Using Twigs and Natural Materials 51

04 **Emotional Regulation Activities** 55

Level Kindergarten
Nature calm corner 56

Level Primary Education
Emotion tree: growing feelings in nature 60

05 **Physical/ Movement-based activities** 64

Level Kindergarten
Animal Movement Adventure 65

Level Primary Education
Movement Circuit Challenge 69

06 **STEAM activities in nature** 73

Level Kindergarten
Water Play Lab: Exploring Water Through Nature 74

Level Primary Education
Build your own mini ecosystem 78

07 **Creative/ artistic activities** 81

Level Kindergarten
Color Hunt & Nature Art Board 82

Level Primary Education
Nature Mandalas: Patterns in Nature 86

08 **Daily- routine outdoor activities** 90

Level Kindergarten
Weather Helper Walk 91

Level Primary Education
Outdoor Morning Energiser 94

References 98



WELCOME MESSAGE

Welcome to the NATURE DIVERSE Guide, a practical resource designed to inspire and support educators in creating meaningful, inclusive, and engaging learning experiences through nature.

Every child deserves opportunities to learn, explore, and thrive in environments that recognise and celebrate their unique strengths. Nature offers a rich, flexible, and multisensory learning space where neurodiverse children, including children with autism, can develop confidence, curiosity, communication, social interaction, and a deeper connection with the world around them. By combining inclusive educational practices with nature-based learning and STEAM approaches, this guide aims to help educators create experiences that are accessible, enjoyable, and beneficial for all learners.



01 Introduction



If you have always felt the call of nature and believe that learning outside the classroom is beneficial for your students, then embark on this adventure.

The Guide for preschool and primary school teachers consists of an introductory section, an overview and presentation of the project, the project partners, and the project objectives. It also presents the development of methods for learning in nature throughout history.

The main part of the Guide presents practical activities in several domains:

- **Sensory Regulation Activities,**
- **Social Skills Activities,**
- **Communication-focused activities,**
- **Emotional Regulation Activities,**
- **Physical/ Movement-based activities,**
- **STEAM activities in nature,**
- **Creative/ artistic activities, and**
- **Daily routine outdoor activities.**

On each domain, two activities are suggested, one for the **younger age group (preschool)** and one for the **older age group (primary school).**



This guide was developed within the framework of the **Erasmus+ project "Nurturing Inclusive Learning Through Nature-Based Education for Neurodiverse Children – NATURE DIVERSE"**, coordinated by **Vimodo ITD from Cyprus**, together with partners **Center for autism (Croatia)**, the **Association for Improving the Quality of Life of People with Autism Spectrum Disorders "Sina Svetulka" (North Macedonia)**, and **Growing and Learning "Tree-gether" Forest School (Research and Resource Center) Ltd (Cyprus)**.

The objectives of the project were:

- to develop a range of practical nature-based educational activities adapted to the needs of children and students with autism
- to provide specific support to professionals in acquiring additional skills and knowledge related to nature-based activities
- to create a supportive environment for neurodivergent learners.

The needs analysis survey conducted among preschool educators and teachers in all partner countries made a significant contribution to the development of the Guide.

This Guide is intended for educators working in preschool and primary school settings, teachers interested in nature-based learning, including those involved in Forest Schools, and professionals seeking to enhance their skills in delivering inclusive and nature-based STEAM education for students with autism.

A history of Nature learning

Forest School has deep roots in long traditions of outdoor learning and child-centred education, but the modern Forest School movement has identifiable milestones:

- **Longer educational roots (1800s–1900s):** European and UK educational thought increasingly emphasized childhood, play, experience, and the value of the natural world (with influences from romantic/nature philosophies and child-centred educators).
- **Scandinavian developments after WWII:** Nordic "forest pedagogy" traditions developed in cultures shaped by friluftsliv ("free-air life"), including initiatives in Sweden and wider Nordic early years movements.
- **Early forest kindergarten origins (Denmark, early 1950s):** One widely cited account traces the first forest kindergarten to Denmark in the early 1950s, associated with Ella Flautau and community "walking kindergarten" practices (FSF, 2020a, 2020b). Both Sweden and Denmark pioneered the "forest school" concept in the 1950s, focusing on nature-based, play-led education to boost resilience, confidence, and motor skills. Denmark is famous for originating forest kindergartens (skovbørnehaver) (Gazdula, Gazdula, & McGee, 2022), while Sweden is known for the "Skogsmulle" concept and rain-or-shine outdoor schools (I Ur och Skur). "Skogsmulle" or "rain-or-shine" were developed around the same time (1957) by Goesta Frohm with the "Skogsmulle" concept to teach nature appreciation. Both are excellent, sharing similar philosophies.
- **Forest School in the UK (1993 onwards):** The term "Forest School" was coined in the UK **after a 1993 study visit to Denmark** by staff associated with Bridgwater College. Although the label **is not used in Denmark**, it captured the imagination and spread quickly.
- **2000s–2012:** Forest School expanded rapidly across the UK, and in 2012, the Forest School Association was established as a national body following consultation, which helped clarify shared principles and practice standards.
- **Today:** It continues to evolve internationally, often adapting to local culture, landscape, and education systems. (forestschoolassociation.org)



Benefits of Nature-Based Learning (NBL)

Throughout history, people have recognized and utilized the benefits of Nature-Based Learning, including improved educational outcomes and higher academic achievement, but also positive effects on children's physical, emotional, and social well-being. These benefits include motivation and engagement, cognitive functions such as attention, working memory, and self- regulation, emotional functions such as stress regulation and emotional regulation, and social functions such as prosocial behaviour and cooperation.

According to Dadvand et al. (2015) and Wu and Jackson (2017), green spaces are associated with improved mental health, behavioural regulation, and cognitive development in children.

Other advantages include children's stronger connection with nature, improved ecological awareness, and climate resilience.

Modern times bring new challenges to learning, including excessive screen exposure and screen dependency, reduced children's physical activity and time spent outdoors, diminished attention spans, and growing mental health concerns throughout adolescence and into adulthood. It is therefore unsurprising that increasing attention is being given to the benefits that outdoor learning can offer children of all ages for intrapersonal and interpersonal growth, as well as the benefits of outdoor environments for curriculum-based education (Mann et al., 2021).

Learning outdoors has been defined as taking students outdoors into their immediate or nearby surroundings to learn essential lessons of the curriculum, with four possible zones: (a) school grounds, (b) local neighbourhoods, (c) day excursions, and (d) overnight stays/residential camps and expeditions (Beames et al., 2012). In a nature-based program, children are provided unstructured materials (e.g., sticks, leaves, dirt, rocks) that are completely open-ended without prescribed uses. They are constantly involved in transforming these unstructured materials into new things using their imaginations.

Children must activate creativity and problem-solving to play in this type of environment. They must learn to think flexibly and adapt to changing circumstances, as dirt becomes mud and rocks and leaves become slippery and wet in the rain. The open-ended materials are conducive to teamwork that incorporates the ideas of the group. In the outdoor setting, children will transform a stick shelter into a rocket ship one day and a grocery store the next (Cordiano et al., 2019).

Nature-based education encompasses a range of interconnected educational approaches in which nature plays a central role. Recognizing and highlighting the numerous benefits it brings to students and teachers is key to its successful implementation in schools and other learning environments.

Nature-based education can inform education across all geographies and levels, from early childhood care to primary and secondary education, as well as higher education. This form of education is applicable and beneficial for all students, including children from diverse cultural backgrounds, disadvantaged socioeconomic circumstances, or those with various educational challenges. Therefore, it can be argued that outdoor learning offers all children the opportunity to learn and play in natural environments that support and enhance both academic and socio-emotional development.

From Research Findings to Practical Guidance

Within the project "*Nurturing Inclusive Learning through Nature-Based Education for Neurodiverse Children,*" a cross-national research study was conducted in March 2026 in North Macedonia, Croatia, and Cyprus. The study explored educators' experiences, preparedness, current practices, and needs related to implementing nature-based learning with autistic and other neurodiverse children. The findings served as an evidence base for the development of the Teacher's Guide on Nature-Based Instruction for Neurodiverse Students.

The research showed that although the majority of educators already work with neurodiverse students (69% in North Macedonia, 79% in Croatia, and 74% in Cyprus), nature-based learning is still not routinely implemented. Educators identified safety, behaviour and emotional regulation, sensory needs, and the unpredictability of outdoor environments as important challenges. At the same time, they expressed a strong need for practical and ready-to-use activities, step-by-step guidance, adaptation strategies, visual supports, and sensory-friendly approaches. These findings directly informed the content of the Teacher's Guide, ensuring that it responds to educators' real needs and supports safer, more inclusive, and meaningful learning experiences in nature.

The findings also highlighted important differences between the three participating countries, showing that educators' needs are influenced by local educational contexts, access to natural environments, staffing structures, and previous training opportunities. For this reason, the Teacher's Guide was designed to be flexible and adaptable rather than prescriptive. It aims to provide educators with practical tools that can be adjusted to different settings, age groups, levels of support needs, and available outdoor spaces, while maintaining a strong focus on safety, inclusion, participation, and the individual needs of neurodiverse learners.

02

Neurodiversity and Autism in Nature-Based Learning



The neurodiversity paradigm conceptualises autism and other neurodevelopmental conditions as natural variations in human cognition and perception, rather than as pathological deficits. Within this framework, differences in sensory processing, attention, communication, and social engagement are recognised as aspects of human diversity. Educational environments play a critical role in either amplifying stressors or facilitating participation.

NBL environments may provide specific benefits for autistic and other neurodivergent learners. Findings indicate that natural environments have been shown to reduce stress (Jiang et al., 2014), increase the ability to focus attention (Bratman et al., 2012), increase curiosity, motivation, and commitment to learning situations (Sandell and Öhman, 2010), and increase opportunities for physical and emotional activity through playful activities in nature (Fjørtoft, 2004). Additionally, research in Forest School contexts demonstrates positive academic, social, and emotional outcomes for children with autism and severe learning difficulties, including increased confidence, engagement in manageable risk-taking, friendship development, and emotional expression (Bradley and Male, 2017). Evaluations of inclusive Forest School programmes conclude that outdoor learning can address the needs of pupils with complex and severe learning difficulties, particularly in the domains of personal, social, and communication (Pavey, 2006).

In applied contexts, animal-assisted and nature-based interventions have demonstrated improvements in activity engagement, daily routines, and occupational participation among young adults with autism, with sustained benefits observed at one-year follow-up (Holmberg and Gunnarsson, 2025). Participants reported experiences aligned with the dimensions of “doing,” “being,” “belonging,” and “becoming,” indicating that nature-based engagement may support both functional and existential aspects of participation.

A large-scale ecological analysis in California found that higher levels of forest, grassland, and tree canopy coverage were inversely associated with autism prevalence in highly urbanised districts (Wu and Jackson, 2017). While causal pathways require further investigation, proposed mechanisms include buffering air pollution and noise, reducing stress, and enhancing opportunities for restorative attention.

Collectively, these findings indicate that NBL environments not only accommodate neurodivergent learners but also actively align with their learning profiles.

Theoretical Foundations

Biophilia Hypothesis

The biophilia hypothesis (Wilson, 1984) posits that humans have an innate affinity for natural environments. Contact with nature is theorised to promote psychological restoration and reduce stress. Attention Restoration Theory (Kaplan and Kaplan, 1989) suggests that natural environments support “soft fascination, ”enabling recovery of directed attention capacities”. For neurodivergent learners who experience cognitive fatigue in high-demand indoor settings, natural environments may offer restorative conditions that facilitate sustained engagement and emotional regulation.

Sensory Integration

From a sensory integration perspective (Ayres, 1972), autism is associated with atypical sensory modulation, including hypersensitivity or hyposensitivity to auditory, tactile, visual, and proprioceptive stimuli. Traditional classrooms may amplify dysregulating stimuli, such as fluorescent lighting and unpredictable noise. In contrast, outdoor environments provide rhythmic, patterned, and multisensory input, including wind movement, soil textures, and proprioceptive feedback from climbing or carrying objects, which may support sensory organisation and self-regulation. The embodied and movement-based nature of NBL aligns with sensory integration principles by enabling regulation through action rather than solely through cognitive control.

Monotropism

The monotropism theory of autism (Murray, Lesser, and Lawson, 2005) posits that autistic cognition is characterised by deep, focused attention on a limited number of interests at any given time. Rather than fragmenting attention across multiple competing stimuli, monotropism enables sustained engagement in meaningful tasks. NBL settings, which allow extended exploration of natural materials, animal care, building activities, or ecological observation, may support this attentional style. The open-ended, interest-led structure of many nature-based activities offers opportunities for deep engagement without the need for frequent redirection.

Occupational Science

Occupational science conceptualises participation in meaningful activity as central to health and identity (Wilcock, 2006). The dimensions of doing, being, belonging, and becoming provide a framework for understanding NBL's impact on neurodivergent learners. Holmberg and Gunnarsson (2025) found that nature-based interventions facilitated increased daily activity and social participation among young adults with autism. Within this framework, NBL is not merely an instructional method but a context for meaningful occupation that supports identity formation, competence, and social connectedness.



How Nature Supports Neurodivergent Children

Nature offers much more than fresh air and space to play; it provides an environment that naturally supports the regulation, well-being, and development of neurodivergent children. For children who experience the world more intensely, more quickly, or differently, being outdoors often reduces pressure rather than adding to it. Instead of adapting to rigid rules, when in nature, children can simply be themselves.

Nature does not “fix” neurodivergent children. It removes barriers-sensory overload, social performance demands, rigid expectations - and creates a space where regulation, curiosity, and authenticity arise naturally.

Regulation Through Movement

For many neurodivergent children, including autistic children, children with ADHD, sensory differences, or heightened anxiety, regulation begins in the body, not in the mind. Movement is not a distraction from learning; it is the foundation of learning. Movement helps release excess energy and stress, increases focus and body awareness, reduces sensory overload, and strengthens emotional safety.

Natural environments naturally invite functional movement such as climbing rocks, balancing on logs, digging, carrying branches, and running across uneven terrain. These movements provide proprioceptive and vestibular input that helps calm and organize the nervous system.

Unlike classrooms, where movement is often corrected (“sit still,” “don’t run”), movement in nature is expected and accepted. Rhythmic and repetitive activities-walking along a trail, throwing stones into water, raking leaves-can have a profoundly calming effect.

In nature, movement is not a problem to be controlled, but a tool for wellbeing.

Predictable Natural Patterns

Although nature may appear unstructured or “wild,” it is filled with deeply reassuring patterns. The cycle of day and night, the changing seasons, the rhythm of waves, birdsong, plant growth - these are repeating, reliable patterns that children can observe and anticipate.

For neurodivergent children, predictability means safety. Predictable natural patterns reduce anxiety, lower cognitive load, support emotional regulation, and build a sense of competence and control.

Unlike artificial schedules imposed from the outside, natural rhythms feel inherent and meaningful. Changes are gradual, and cause-and-effect relationships are clear: a stone thrown into water creates ripples, stepping on leaves produces a crunch. This sensory harmony allows the nervous system to settle without extra effort.

Nature offers structure without rigidity and change without chaos. The play (and/or work) that autistic people engaged in during NBL often had a more logical purpose and was more predictable than some indoor classroom activities, and these types

of activities might have more closely aligned with

autistic children’s preferences around play (Conn, 2015)



Reduced Social Pressure

Traditional educational environments carry many unspoken expectations: how to sit, when to speak, how to make eye contact, how to participate “appropriately.” For many neurodivergent children, these expectations create additional cognitive and emotional load that interferes with learning. Unlike crowded indoor environments, open outdoor spaces provide freedom to move, explore, and regulate (The Sensory Benefits of Nature Play, 2026).

Nature naturally reduces this pressure.

In outdoor environments, movement is expected, and natural silence is acceptable; communication can be nonverbal, and each child’s participation can take a different form.

Parallel play - being near other children without direct interaction-becomes a common and valid form of connection. Children can dig, build, or explore side by side, with attention focused on a shared object, such as a stick, an insect, or a stream. The focus is not on performance, but on experience.

Outdoors, there is no “front of the classroom,” no constant observation and evaluation. Attention is spread across the space. Success is experiential rather than graded.

When environmental pressure decreases, the nervous system settles, executive functioning improves, and spontaneous connection and curiosity emerge. Children can choose contact or solitude - without shame or explanation.

This access to nature is not a reward or a break; it is an integrated strategy for self-regulation (Beyond the Classroom: Why Nature is a Powerful Teacher for Autistic Young Adults, 2026).

Opportunities for Self-Paced Engagement

Self-paced engagement allows a child to choose when, how, and for how long they can participate in an activity. For many neurodivergent children, learning is deepest when driven by intrinsic motivation rather than external time constraints.

Nature does not rush children.

There is no strictly defined outcome. A child may deeply immerse themselves in an interest - playing with sticks, throwing stones into water, observing insects while exploring briefly before withdrawing, watching from a distance before engaging, or moving between activities according to their own rhythm. This autonomy strengthens self-confidence and trust in one's own needs. Children learn to listen to their bodies and interests rather than adapt to imposed pacing.

For a neurodivergent learning style, which often favors depth over speed, such an environment can be transformative. "Doses of nature" might serve as a safe, inexpensive, widely accessible new tool in the toolkit for managing ADHD symptoms (Taylor and Kuo, 2009).

A systematic review and meta-analysis, including 24 studies with 717 participants, found that Nature-based interventions (NBIs), as an alternative approach outside the traditional natural environment, such as clinics, homes, and education settings, were associated with improvements in health-related functioning outcomes of children with ASD (Fan et al., 2023). Nature-based interventions are professional-led, purposeful approaches that enhance health and well-being by actively involving individuals in structured, nature-based experiences tailored to address specific needs and achieve defined objectives, such as quality of life, general well-being, mental well-being, psychological well-being, self-efficacy, and life satisfaction.

Conclusion

Nature supports neurodivergent children not by asking them to change, but by changing the context. It removes excessive demands and creates a space where movement, silence, parallel play, deep interests, and bodily rhythms are accepted. In such an environment, regulation is not a constant struggle. Learning is not conditional on social performance. Connection is not forced.

Nature offers what many neurodivergent children need most: safety without control, structure without rigidity, and the freedom to be authentic.



03

Inclusion in Nature-Based Learning Environments





Inclusion within NBL extends beyond physical access to outdoor spaces. It necessitates intentional design that supports communication, autonomy, sensory regulation, and social participation.

Forest School research suggests that inclusive outdoor programmes can enhance personal and social development for pupils with significant special educational needs (Pavey, 2006), while children with autism report valuing friendship, challenge, and experiential learning opportunities in such contexts (Bradley and Male, 2017).

Key inclusive features of NBL environments include:

- Predictable routines within flexible structures
- High adult-to-child ratios with facilitative rather than directive roles
- Opportunities for embodied and experiential learning
- Shared practical tasks that support parallel and cooperative interaction
- Sensory-responsive design (quiet retreat spaces, graded exposure to challenge)
- Visual and augmentative communication supports

Importantly, NBL reframes inclusion from remediation to participation. Rather than positioning autistic learners as requiring correction, NBL environments allow their strengths, such as attention to detail, persistence, sensory attunement, and authenticity, to become visible and valued.



Supporting Group Participation: Cooperative Behaviour Strategies in Outdoor Settings

NBL environments require more than physical access to outdoor spaces. They depend on thoughtful facilitation that supports cooperation, predictability, and shared responsibility. In outdoor contexts, where activities frequently involve collective risk assessment, shared materials, and joint problem-solving, group-based behaviour strategies can provide structure while maintaining a strengths-based and neurodiversity-affirming approach.

Group contingencies should not be framed as behaviour control systems. Rather, when implemented ethically, they function as community agreements that reinforce safety, mutual support, and environmental stewardship. This perspective aligns with occupational science, which emphasises participation, belonging, and meaningful engagement as central to health and identity (Wilcock, 2006).

Why Group-Based Reinforcement Fits Nature-Based Learning

Nature-based programmes often rely on collaborative tasks such as shelter construction, gardening, trail exploration, or animal care. These contexts lend themselves naturally to shared goals and collective accountability. Interdependent structures can reduce performance pressure on individual learners while strengthening peer modelling and social cohesion.

For autistic and other neurodivergent learners, reducing evaluative comparison is particularly important. When group expectations are predictable and framed positively, they can support emotional regulation and sustained attention, particularly in environments that already offer restorative benefits through contact with nature (Kaplan & Kaplan, 1989).

Types of Group Contingencies

Educators may encounter three general formats of group contingency. While each has practical applications, the interdependent model is typically the most appropriate in inclusive NBL settings.

Independent Group Contingency

All learners are given the same behavioural expectation and earn reinforcement individually. For example, each child who completes a safety check independently may earn additional exploration time. This approach maintains fairness but may still highlight individual differences in performance.

Dependent Group Contingency (also known as the Hero Procedure)

The entire group earns reinforcement based on the behaviour of one selected learner (e.g., a “mystery helper”). In inclusive contexts, this format should be used cautiously, as it can unintentionally increase social pressure or anxiety.

Interdependent Group Contingency

The group works toward a shared criterion, and reinforcement is delivered when collective expectations are met. For example, “If we all follow the agreed tool-use rules, we will have extended time for free forest exploration.” This format aligns well with outdoor pedagogy because tasks are inherently cooperative. It also supports shared responsibility without isolating individual learners.

Interdependent structures are particularly consistent with the neurodiversity paradigm, which recognises variation in attention, communication, and sensory processing as natural aspects of human diversity rather than deficits. Outdoor learning environments may already reduce stress and attentional fatigue through restorative exposure to natural stimuli (Kaplan & Kaplan, 1989; Dadvand et al., 2015). Group-based reinforcement can complement these environmental supports by clarifying expectations and promoting collective engagement.

Examples

In practice, group contingencies should be transparent, visually supported where necessary, and connected to meaningful outcomes. Reinforcement is most effective when it enhances autonomy or choice rather than relying on extrinsic rewards.

Examples include:

- If the group completes the gathering-circle routine calmly and safely, they choose the closing reflection activity.
- If all learners demonstrate safe tool use during a woodwork session, the group earns additional creative building time.
- If the group collectively follows “leave no trace” principles, they unlock access to a new exploration zone in the following session.
- Stewardship points earned for cooperation, equipment care, and respect for wildlife contribute toward a shared seasonal celebration activity.

These examples reinforce pro-social and safety behaviours while preserving intrinsic motivation. The emphasis remains on participation and shared accomplishment rather than competition.



Ethical and Inclusive Considerations

To remain aligned with inclusive practice, several safeguards are necessary:

- Expectations must be developmentally appropriate and clearly modelled. Visual schedules or pictorial cues may support predictability for learners who benefit from structured communication supports. Facilitators should avoid public comparisons, ranking systems, or language that attributes group outcomes to a single child.

- Importantly, group contingencies should be flexible enough to accommodate the sensory regulation needs. From a sensory integration perspective, autistic learners may require movement breaks, reduced sensory input, or alternative participation methods (Ayres, 1972). A child who temporarily withdraws to regulate should not be framed as preventing group success. Instead, behaviour should be interpreted within a regulatory framework, and environmental adjustments should be prioritised.

- When implemented with sensitivity, cooperative behaviour strategies shift the focus from compliance to collective participation. They support the dimensions of “doing” and “belonging” identified in occupational science (Wilcock, 2006) and align with research indicating that outdoor environments can enhance engagement, emotional regulation, and social participation among neurodivergent learners (Bradley & Male, 2017; Pavey, 2006).

- In this way, group contingencies shift from reward systems to cultivating a learning community—one in which safety, cooperation, and respect for both people and nature are shared responsibilities.

04

Nature-based learning activities



4.1 Activities

In this Guide, two activities will be offered for each of the next eight domains:

- **Sensory Regulation Activities**
- **Social Skills Activities**
- **Communication-focused activities**
- **Emotional Regulation Activities**
- **Physical/ Movement-based activities**
- **STEAM activities in nature**
- **Creative/ artistic activities**
- **Daily- routine outdoor activities**

4.2 Age Group



Kindergarden



Primary School

One of the two activities is intended for the **younger age group (preschool)** and the other is intended for the **older age group (primary school).**

4.3 Activity Structure

- Activity name
- Location (forest, coast, park, mountain)
- Duration & difficulty level
- Group size
- Materials and equipment needed (weather and activity planning)
- Sensory profile (quiet/loud, messy/clean, movement level) *Prerequisite skills
- Safety notes
- Goals (what the child may gain) / Skills supported (emotional, physical, social, cognitive)
- Step-by-step instructions / visual support

4.4 Adaptations

Every autistic child is unique, and no single approach will work for everyone. Adaptations should always be individualized, taking into account the child's strengths, interests, communication style, sensory profile, and support needs. The strategies below represent some of the most commonly used evidence-informed adaptations that can help create more inclusive and accessible outdoor learning experiences.

💬 Communication Adaptations

- Use clear, concise, and concrete language.
- Give one instruction at a time.
- Supplement spoken language with visual supports (pictures, symbols, photographs, or written instructions).
- Demonstrate activities instead of relying solely on verbal explanations.
- Check understanding by asking children to show or explain what will they do.
- Allow additional processing time before expecting a response.
- Offer choices rather than open-ended questions when appropriate.
- Use children's special interests to increase engagement and motivation.

👁 Visual Supports

- Use a visual schedule of the session.
- provide a step-by-step sequence of the activities
- Use "First–Then" boards to explain activity sequences.
- Provide visual boundaries to define activity areas.
- Use visual timers or countdowns for transitions.
- Show photographs or examples of the expected final product.
- Use cue cards for social expectations or safety rules.
- Prepare visual checklists for multi-step activities.



🅰 Sensory Adaptations

- Identify potential sensory triggers in the outdoor environment before activities begin.
- Offer noise-reducing headphones if needed.
- Allow sunglasses or hats for children sensitive to bright light.
- Provide gloves for children who dislike certain textures.
- Create access to quiet or low-stimulation spaces for breaks.
- Allow children to observe before participating.
- Offer movement breaks throughout longer sessions.
- Avoid forcing participation in sensory experiences such as mud, water, or insects.
- Allow children to engage with sensory materials at their own pace.

🌳 Environmental Adaptations

- Keep routines predictable whenever possible.
- Clearly define activity spaces.
- Reduce unnecessary distractions during instructions.
- Prepare children in advance for changes in weather or plans.
- Visit new outdoor environments before introducing structured activities, when possible.
- Use familiar meeting points and consistent routines.

🧩 Activity Adaptations

- Break complex activities into smaller, manageable steps.
- Provide additional time to complete tasks.
- Offer multiple ways to participate in the same activity.
- Allow children to work individually, with a partner, or in small groups.
- Adapt the level of challenge according to each child's abilities.
- Provide alternative materials if certain textures or tools are uncomfortable.
- Build activities around children's interests whenever possible.

🕑 Transition Supports

- Give advance warnings before changing activities (e.g., "Five minutes left").
- Use visual countdowns or timers.
- Explain what will happen next.
- Keep transition routines consistent.
- Allow children to carry a preferred object if it provides comfort.
- Minimise waiting times between activities.

Adaptations are not about lowering expectations, they are about removing barriers to participation.

01

Sensory Regulation Activities



1.A Nature sound walk: Listening to the forest



Location

This activity takes place in a natural outdoor environment, such as a school forest, nature trail, park, garden, or quiet green space. The natural setting provides a wide variety of sounds, including birdsong, rustling leaves, insects, flowing water, and wind. These sensory experiences help children become more aware of their surroundings while promoting calmness, attention, and emotional regulation. A quiet and safe outdoor space with minimal traffic noise is recommended.



Group size

The activity is most effective in small groups of 6–12 children. Children may participate individually, in pairs, or in small groups, depending on their sensory preferences and communication styles. Smaller groups help reduce distractions and create a more predictable and calming experience for neurodivergent learners.



Difficulty

Easy. The activity requires only listening, observing, and simple communication. It can be adapted for children with different developmental levels and communication abilities.



Duration

Approximately 30–45 minutes. Shorter 10–15-minute listening sessions may be repeated regularly as part of a daily sensory regulation routine.

1.A Nature sound walk: Listening to the forest



Materials & equipment

- Nature sound cards or picture cards
- Clipboards and paper (optional)
- Pencils or crayons
- Visual instruction cards
- Small mats or cushions for sitting
- Optional: simple sound recording device or tablet



Sensory profile

This activity primarily provides auditory sensory input through listening to natural sounds. It also includes visual sensory experiences through observing nature and proprioceptive regulation through slow walking and controlled movement. The calm and predictable nature of the activity may support self-regulation, focus, and emotional well-being. Children sensitive to sound may use noise-reducing headphones when needed.



Safety notes

Ensure that the walking route is safe, accessible, and free from hazards. Children should remain within sight of adults at all times. Educators should check the area beforehand for potential allergens, uneven ground, or environmental risks. Clear boundaries should be established before the activity begins.



Goals / Skills supported

- Improve sensory awareness and auditory discrimination
- Support emotional regulation through mindfulness in nature
- Develop attention and listening skills
- Increase awareness of the natural environment
- Encourage communication and descriptive language
- Strengthen observation and concentration
- Promote relaxation and stress reduction
- Build confidence in outdoor exploration

1.A Instructions



Step 1: Introduce the activity

Explain that children will become “Nature Sound Detectives” and explore the sounds that exist around them in nature.



Step 2: Practice quiet listening

Ask children to sit quietly for one minute and focus only on listening to the sounds around them.



Step 3: Begin the nature walk

Walk slowly through the outdoor area, encouraging children to move calmly and quietly.



Step 4: Stop and listen

At several points along the route, stop for one minute and invite children to identify sounds they hear.

1.A Instructions



Step 5: Match sounds to nature

Children use picture cards or point to natural objects that may be producing the sounds they hear (birds, wind, leaves, insects, water).



Step 6: Create a sound map

Children draw symbols, pictures, or simple marks representing the sounds they noticed in different locations.



Step 7: Share discoveries

Invite children to discuss or show which sounds they heard and which sounds felt calming, exciting, or surprising.



Step 8: Reflection and relaxation

Finish the activity by sitting quietly together for a final minute of listening and reflecting on how nature sounds made them feel.

Sensory regulation focus: This activity supports self-regulation by encouraging mindful listening, reducing sensory overload, promoting attention to predictable natural sounds, and creating opportunities for calm engagement with the outdoor environment.

1.B Nature texture trail: exploring nature through touch



Location

This activity takes place in a safe, accessible outdoor environment, such as a nature school, sensory garden, school courtyard, park, or forest path. The activity encourages children to explore natural textures through touch while moving at their own pace. The outdoor setting provides rich tactile experiences that support sensory processing, exploration, and emotional regulation. The route should be wheelchair-accessible whenever possible and include areas with a variety of natural materials.



Group size

The activity is most effective with small groups of 6 - 12 children. Children may participate individually, with a peer, or alongside an adult support person. Small groups help reduce sensory overload and allow educators to provide individualised support.



Difficulty

Easy. The activity can be adapted for children with physical disabilities, autism, intellectual disabilities, visual impairments, communication difficulties, or multiple disabilities. Participation can range from direct exploration to observation and assisted engagement.



Duration

Approximately 30–45 minutes. Shorter sessions of 10–15 minutes can be used as sensory breaks throughout the school day.

1.B Nature texture trail: exploring nature through touch



Materials & equipment

- Nature baskets or collection trays
- Visual communication cards
- Choice boards
- Magnifying glasses (optional)
- Sensory gloves (optional)
- Wheelchair-accessible containers for collected items
- Clipboards and drawing materials (optional)
- AAC devices or communication supports when needed



Sensory profile

This activity primarily provides tactile sensory input through touching natural materials such as leaves, bark, grass, moss, stones, flowers, feathers, and seeds. It also incorporates visual, auditory, and proprioceptive experiences through movement and observation. Children can choose their preferred level of sensory engagement, promoting comfort, self-regulation, and independence.



Safety notes

Inspect the area beforehand for allergens, sharp objects, toxic plants, or uneven surfaces. Ensure all pathways are accessible and safe for children with mobility challenges. Participation should always be voluntary, and alternative ways of exploring materials should be available for children who do not wish to touch certain textures directly.



Goals / Skills supported

- Improve sensory processing and tactile exploration
- Support emotional regulation and self-calming
- Develop communication and choice-making skills
- Encourage independence and self-advocacy
- Strengthen fine motor skills
- Increase attention and engagement with nature
- Promote inclusion and participation
- Foster curiosity and environmental awareness

1.B Instructions



Step 1: Introduce the activity

Explain that children will become "Nature Texture Explorers" and discover different textures found in nature.



Step 2: Explore the environment

Walk slowly through the outdoor area and encourage children to observe natural materials around them.



Step 3: Touch and Discover

Invite children to safely touch different natural materials such as leaves, bark, stones, grass, moss, flowers, or feathers.



Step 4: Describe the Texture

Support children in describing textures using words, symbols, pictures, gestures, AAC devices, or facial expressions. Examples include soft, rough, smooth, bumpy, dry, or fluffy.

1.B Instructions



Step 5: Collect Favorite Items

Children select several natural objects they enjoy and place them in a basket or tray.



Step 6: Sort and Compare

Children sort materials according to texture, size, shape, or personal preference.



Step 7: Create a Nature Texture Board

Arrange collected materials on a board, paper, or tray to create a sensory display.



Step 8: Reflection and Relaxation

Gather together and discuss:

- Which texture felt comfortable?
- Which texture was surprising?
- Which natural object would you like to explore again?

End with a short relaxation activity, encouraging children to hold their favorite natural object while taking slow breaths and listening to nature sounds.

02

Social Skills Activities



2.A Making a Human Figure from Natural Materials



Location

The activity takes place outdoors, such as in a yard, park, or a natural area of the kindergarten, with the option of continuing indoors on a cardboard base or large sheet of paper. A calm environment free from excessive noise and distractions should be provided.



Group size

Recommended Group Size: 4 to 8 children working together on one large, collaborative human figure. If the group is larger, children can be divided into smaller groups, with each group creating its own figure.



Difficulty

Easy. Adaptable to the age and abilities of children (ages 4–6).
Not every child has to participate in each part of the activity. They may observe the activity before joining in, and different forms of expression and creativity are welcomed.
Clear and simple instructions should be provided, and the activity should be divided into small steps (choose materials, make the head, add arms, add legs, decorate the figure).



Duration

Approximately 45–60 minutes in total, divided into several shorter segments. The duration and complexity can be adjusted as needed.

2.A Making a Human Figure from Natural Materials



Materials & equipment

- Visual representation of a human figure
- Natural materials: leaves, twigs, pebbles, pinecones, grass, flowers, acorns
- Base: cardboard, large paper, or a flat outdoor surface (playground)
- Child-safe scissors with rounded tips and glue (if needed)
- Fabric baskets or boxes for collecting and sorting materials
- Visual step-by-step instructions
- Wet wipes and tissues



Sensory profile

Children are offered a choice of materials according to their sensory preferences. Some children may choose not to use certain textures. Gloves can be provided for children who are sensitive to touching natural materials. Children are free to select the materials they feel comfortable handling. Clean and safe materials, free from unpleasant odors and hazards, may be used if preferred.



Safety notes

- Check the area before the activity and remove any hazardous objects / remind children not to put materials in their mouths, noses, or ears
- Use only safe, clean, and undamaged natural materials free from thorns and mold
- Avoid plants that may cause allergic reactions or are poisonous
- Ensure continuous adult supervision throughout the activity
- Monitor the proper use of rounded-tip scissors
- Encourage handwashing after the activity
- Promote careful movement and safe handling of materials
- Provide sufficient space for movement and work
- Adjust the activity to weather conditions when conducted outdoors



Goals / Skills supported

- Learning about natural materials and their diversity
- Sensory awareness and exploration of natural textures
- Identification of body parts
- Development of fine motor skills and creativity
- Communication skills: listening, expressing ideas, and negotiating
- Social skills: sharing, cooperation, and respect for others' ideas
- Strengthening a sense of belonging and teamwork
- Emotional intelligence: developing empathy and understanding others
- Encouraging independence and self-confidence during group work

2.A Instructions



Step 1: Introduction to the Activity (5–10 minutes)

Children stand in a circle and talk about the human body and nature (What body parts does a person have? What natural materials could be used for a head, arms, or hair?). The teacher shows a picture of a person or an example made from natural materials.



Step 2: Exploring and Collecting Materials (15–20 minutes)

Children explore the yard, park, or forest and collect natural materials needed to create a human figure (leaves, twigs, pebbles, grass, pinecones, etc.).



Step 3: Planning the Human Figure (5 minutes)

Children examine the collected materials together and decide which materials they will use for different body parts (e.g., pebble = head, twigs = arms and legs, grass = hair, leaves = clothing).



Step 4: Creating the Human Figure from Natural Materials (20–30 minutes)

Children arrange the collected materials on the chosen surface to create a human figure. The teacher guides and supports them by giving instructions, asking questions, and providing visual support when needed.

2.A Instructions



Step 5: Presentation of the Creations (10 minutes)

Each group presents their human figure and explains the materials they used.



Step 6: Reflection and Relaxation (5–10 minutes)

Children sit in a circle and observe their creations and the surrounding nature. They discuss how they felt during the activity (What did they enjoy? What was difficult?).



Step 7: Cleaning Up (5 minutes)

Children work together to collect any remaining materials and tidy up the activity area. The teacher reminds them of the importance of caring for nature and shared spaces.

2.B Tic-Tac-Toe



Location

The Tic-Tac-Toe game can take place in any setting, but here it is designed primarily for an outdoor learning environment, such as a park, woods, or natural green space within or near the school. This activity enables students to engage with nature through walking, observing ecosystems in their natural habitats, identifying suitable locations or materials required for the activity, or participating in the activity itself. A calm and structured outdoor space is recommended to ensure accessibility, safety, and comfort for all learners, including neurodivergent ones.



Group size

The activity is suitable for small to medium groups of approximately 10–12 students. Students can work individually, in pairs, or divided into smaller groups. In this way, social skills are developed and encouraged, such as cooperation and negotiation among students, as well as maintaining personal space and waiting for one's turn.



Difficulty

Easy to Moderate. The game includes basic instructions on the rules of the game, as well as finding and collecting the materials needed for the game. It requires observation, patience, and concentration. Instructions can be easily adapted to different cognitive and developmental levels, while also providing students with help and support in playing the game. Visual reminders and cards with instructions and/or game rules can be prepared.



Duration

The total duration of the activity may vary depending on the proximity of the location where the activity is performed and the availability of materials needed to set up and play the game. The expected duration of the game, including all preparations, is 45-60 minutes. The game itself can last up to fifteen minutes, and it can be played multiple times.

2.B Tic-Tac-Toe



Materials & equipment

- twigs (for the network)
- small stones
- leaves / flowers / acorns / pine cones
- flat surface (ground, sand, grass)
- sitting mats
- gloves
- noise-reducing headphones
- visual activity schedule



Sensory profile

This activity, thanks to the different types of sensory stimuli found in a natural environment, provides participants with a multi-sensory experience. Alongside visual and olfactory stimuli, which are an integral part of nature, the main focus of the activity is on tactile tasks. Adaptations for participants with sensory sensitivities may include wearing gloves, selecting specific materials for the activity (such as stones, pine cones, leaves, etc.), using noise-reducing headphones, or providing the option to walk around or retreat to a quiet corner.
Sensory motor goals of the activity: coordination of movement, object manipulation, and regulation through movement.



Safety notes

The area must be checked for holes, glass, and sharp objects. Avoid slippery or overly steep surfaces. Pre-define movement rules and the area in which students can safely move around.
All materials used must be non-toxic and safe for children. DO NOT use unknown plants or thorns/sharp twigs. Emphasize: “Do not put items in your mouth” and monitor students during the activity. Prepare a first aid kit in case of insect stings, allergic reactions, and other emergencies.
Clearly define and use visual aids to inform students about the beginning, goal, and end of the activity. Avoid competitive pressure and encourage cooperation among students.



Goals / Skills supported

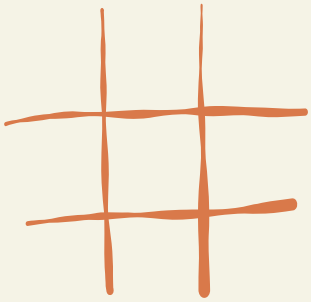
- Cognitive – understanding and applying rules, observing and understanding spatial relationships, problem solving, and learning through trial and error
- Social – turn-taking, exchange in communication, cooperation with peers
- Emotional regulation – accepting game outcomes, regulation through movement
- Sensory-motor – coordination of movement, fine motor skills through object manipulation
- Ecological – exploring natural materials, developing a relationship with the environment
- Minimum skills required: ability to follow simple instructions (1–2 steps), basic understanding of turn-taking in play, and short attention span (a few minutes)
- Desired skills: pattern recognition, basic social interaction, tolerance of discomfort (waiting for a turn, possible loss in the game)

2.B Instructions



Step 1: Explore the nature/area (15-20min)

Students explore the outdoor area in search of a suitable location for carrying out the activity and, along the way, they collect materials they will use during the activity (branches, stones, leaves, pine cones ect.)



Step 2: Prepare the frame and the net (5-10min)

Students build the net (3x3) using the collected materials based on the teacher's instructions.



Step 3: Introduction to the game (5–10 min)

The teacher demonstrates the game of Tic-tac-toe, explaining the steps and the objective. The teacher can show students what a win looks like and check if the students understand of the rules and objectives of the game.



Step 4: Forming teams (5min)

Students are divided into pairs or teams. The teacher explains the importance of cooperation and agreement, as well as, respecting turn-taking in accordance with the game rules.

2.B Instructions



Step 5: Play in pairs / small groups (10-15min)

Students play the game while the teacher moderates turn-taking. Reminder/visual cards such as “your turn / my turn” can be used. Students should be given enough time to decide on their next move. At the end of the game, the winner is identified. The game can be repeated multiple times.



Step 6: Calming down and reflection (5–10 min)

Students gather in a circle and may sit on the ground if they have appropriate seating mats. They briefly listen to the sounds of nature and then reflect on their experience of the game. For reflection, students can use pre-prepared visual cards or describe their experience in their own words (e.g., “what was easy/difficult for me,” “what I found interesting,” etc.).



Step 7: Cleaning and tidying the area

Students collect the materials used for the game and leave the outdoor space neat and clean.

03

Communication focused activities



3.A Forest Explorers – Find and Tell



Location

The activity can be carried out in the kindergarten yard, a nearby park, meadow, forest trail, or another natural area close to the kindergarten. The space should be visible, safe, free from hazardous obstacles, and allow easy movement for children with different motor abilities.



Group size

The activity is optimal for 6–10 children, with a ratio of 1 educator to 5 children. For children with greater communication or sensory needs, groups of 4–6 children are recommended.



Difficulty

Easy to Moderate. This activity can be adapted according to the number of tasks, the complexity of communication requirements, the level of adult support, and the sensory needs of the children.



Duration

The total duration of the activity may vary depending on the proximity of the location where the activity is performed and the availability of materials needed to set up and play the game. The expected duration of the game, including all preparations, is 30–40 minutes:

- Short introduction – 5 minutes
- Nature exploration – 10–15 minutes
- Discussion about the collected objects – 10 minutes
- Shared story and conclusion – 5–10 minutes

3.A Forest Explorers – Find and Tell



Materials & equipment

- Picture cards with images of objects from nature (leaf, stone, flower, twig, insect, etc.)
- Communication cards or visual supports (PECS symbols, photographs)
- Baskets or bags for collecting items
- Sitting mats
- Magnifying glass (optional)
- Visual schedule of the activity / visual display of the items to be searched for



Sensory profile

- Allow the use of noise-reducing headphones
- Provide protective gloves for unpleasant textures
- Some students may touch and investigate objects, while others may prefer to observe, smell, listen, or use tools instead of direct contact
- Students can communicate by pointing, using gestures, drawing, writing, using communication devices, or simply showing their understanding through actions
- Provide a quiet corner for rest or a quieter area for children who need fewer sensory stimuli



Safety notes

- Check weather conditions
- Inspect the area before starting the activity
- Remove hazardous objects
- Familiarize children with movement boundaries
- Encourage walking instead of running
- Provide hand sanitizing and/or handwashing facilities after the activity



Goals / Skills supported

- Encouraging verbal and non-verbal communication
- Developing vocabulary and descriptive skills
- Developing listening skills and the ability to follow simple instructions
- Promoting joint attention and social interaction
- Encouraging participation in a shared activity
- Encouraging the sharing of experiences with peers
- Encouraging exploring different sensory experiences
- Building tolerance to natural stimuli
- Recognizing objects
- Matching pictures with real objects
- Making simple decisions

3.A Instructions



Step 1: Preparing the Environment

The educator inspects the area in advance and designates a safe space for exploration. Picture cards, baskets, and the visual schedule are prepared.



Step 2: Introduction and Discussion (5 minutes)

Children sit in a circle. The educator presents the visual schedule (looking at pictures, searching for objects, talking about what was found, creating a shared story, and finishing the activity). The educator shows the cards and names the objects (“Today we are looking for a leaf.”, “We are looking for a stone.”, “We are looking for a twig.”). Understanding is checked by having the children point to the cards.



Step 3: Exploring the Nature (10–15 minutes)

Each child receives 2–4 cards and the task to find the object, showing it, and placing it in the basket. The educator uses short instructions (“Look around.”, “Can you find a leaf?”, “Great, you found it.”).
For children who use alternative communication methods, pointing to or selecting cards is encouraged.



Step 4: Discussion About the Collected Objects (10 minutes)

Children sit in a circle. Each child shows one object. The educator asks questions such as:

- “What did you find?”
- “What colour is it?”
- “Is it big or small?”

For children with greater communication difficulties, two possible answers may be offered, and symbols or photographs can be used.

3.A Instructions



Step 5: Sharing the Story (5–10 minutes)

The educator begins a sentence about what the children did during the activity, and each child adds a word, object, symbol, or gesture in turn.



Step 6: Conclusion

The educator praises different forms of participation (searching for objects, pointing, speaking, and cooperating with others). Together, the children review the collected objects and return them to nature whenever possible.

3.B Creating Your Own Name Using Twigs and Natural Materials



Location

The activity can take place in the schoolyard or a natural area near the school, such as a nearby park, forest, or meadow. Visual aids showing outdoor movement rules can be used, as well as preparatory supports for children who require greater predictability.



Group size

The activity is ideal for small groups of students (up to 8 children) aged 6–10 years, but it can also be organized for larger groups if children work in pairs and receive teacher support.



Difficulty

Easy to moderate. The activity assumes knowledge of the letters in one's own name or even the entire alphabet.
The activity can also be adapted so that children write other words or simple sentences if they have more advanced writing skills. This allows for additional practice in literacy, creativity, and self-expression while utilizing natural materials.



Duration

The activity can last between 45–60 minutes.

- Introduction and preparation: 10 minutes
- Collecting materials: 15–20 minutes
- Creating the name: 20 minutes
- Presentation and reflection: 10 minutes

3.B Creating Your Own Name Using Twigs and Natural Materials



Materials & equipment

- Twigs of different sizes
- Leaves, pebbles, grass, flowers
- Cardboard or sturdy paper as a base
- Glue
- Child-safe scissors with rounded tips
- Baskets or bags for collecting materials
- Visual examples of letters/names (if needed)
- Communication cards or a visual activity schedule



Sensory profile

- Allow a choice of textures
- Use gloves or alternative materials
- Do not force children to touch specific materials
- Allow observation before participation
- A child may collect only one type of material
- Provide sensory gloves if needed
- Use visual cards showing examples of materials
- Allow work in a quieter area
- Use noise-reducing headphones if necessary



Safety notes

- Inspect the area beforehand and remove hazardous objects
- Do not use sharp, thorny, or dirty twigs
- Remind children not to put materials in their mouths
- Use child-safe scissors with rounded tips
- Ensure constant supervision during outdoor activities
- Be aware of allergies to plants, grass, or pollen
- Provide handwashing after the activity
- Encourage safe movement without running or pushing
- Use materials carefully and avoid throwing twigs or stones
- Respect children's sensory needs and allow them to withdraw from the activity if necessary



Goals / Skills supported

- Development of literacy and support for expression through alternative communication methods
- Encouragement of verbal and nonverbal communication in short, structured situations
- Development of fine motor skills and visual-spatial perception
- Development of creativity and imagination
- Reduction of social pressure through work in small groups
- Strengthening identity, self-confidence, and a sense of safety within the group
- Development of cooperation skills, asking for help, and sharing materials
- Development of sensory tolerance and self-regulation
- Encouragement of outdoor exploration and engagement with nature

3.B Instructions



Step 1: Arrival and organization of the space (5 minutes)

Children arrive at the designated outdoor location and sit in a circle on blankets or mats. The facilitator introduces the activity and shows the area where children may collect twigs and pebbles. Children are reminded not to pick living plants.



Step 2: Motivational Discussion in Nature (5–10 minutes)

Children observe the surroundings and natural materials. The facilitator shows an example of a letter made from twigs. Children receive printed versions of their names in large uppercase letters.



Step 3. Collecting Natural Materials (15–20 minutes)

Children work in pairs or small groups to collect twigs, leaves, pebbles, grass, and flowers that have already fallen to the ground. Each child receives a small basket or bag. The facilitator encourages communication (e.g., “Can you find a straight twig?”).



Step 4: Returning to the Shared Space and Sorting Materials (5 minutes)

Children sit in a circle or at tables outdoors. Together, they sort the materials: long twigs, short twigs, leaves, and small stones. They can use labeled boxes for sorting the materials or mats with templates as visual aids to help them arrange and spell their own names.

3.B Instructions



Step 5: Writing/creating their own name (20 minutes)

Children arrange the letters of their name on a base or directly on the ground.
Steps:

- Find the first letter
- Arrange the twigs
- Add the remaining letters
- Decorate the name with leaves or pebbles

Letter templates may be used, or children may create only the first letter of their name.



Step 6: Communication Circle and Presentation of Work (10 minutes)

Children show their names to the group. They may say their name aloud or point to it.
If they wish, children can also describe the process of creating their name, either verbally, by pointing to visual supports, or through alternative forms of communication. This encourages language development, sequencing skills, self-expression, and reflection on their work.



Step 7: Closing and Group Clean-Up (5 minutes)

Children work together to collect the supplies, return natural materials to nature where possible, and clean up the activity area.

04

Emotional Regulation Activities



4.A Nature calm corner



Location

This activity is designed to take place in a calm outdoor environment such as a nature school, forest area, sensory garden, shaded park, or quiet green space. The natural surroundings provide opportunities for children to connect with nature while learning strategies for recognizing, expressing, and regulating emotions. The setting should include comfortable seating areas, trees, plants, and minimal distractions to create a safe and supportive atmosphere.



Group size

The activity is most effective with small groups of 6 - 12 children. Children may participate individually, in pairs, or in small groups. The flexible structure allows educators to provide individualized support while encouraging peer interaction and emotional sharing.



Difficulty

Easy to Moderate. The activity can be adapted to different developmental levels, communication abilities, and emotional needs. Visual supports and alternative communication methods can be incorporated when needed.



Duration

Approximately 30–45 minutes. The activity can also be used as a shorter 10–15-minute emotional regulation routine before or after learning activities.

4.A Nature calm corner



Materials & equipment

- Emotion cards or visual emotion symbols
- Nature collection baskets
- Small mats or cushions
- Visual instruction cards
- Emotion thermometer or feelings scale
- Paper and crayons
- Optional: AAC devices, calming objects, sensory tools



Sensory profile

This activity combines visual, tactile, auditory, and proprioceptive sensory experiences. Children interact with natural materials, listen to nature sounds, engage in slow movement, and practice calming strategies. The predictable structure and natural environment support emotional regulation, stress reduction, and self-awareness.



Safety notes

Ensure that the outdoor area is safe, accessible, and free from hazards. Check natural materials for allergens or sharp objects. Participation should be voluntary, and children should be allowed to take breaks when needed. Respect each child's preferred method of emotional expression.



Goals / Skills supported

- Recognize and identify emotions
- Develop emotional regulation strategies
- Increase self-awareness and emotional vocabulary
- Improve communication and self-expression
- Support mindfulness and relaxation
- Strengthen coping skills
- Encourage empathy and understanding of others
- Promote positive connections with nature

4.A Instructions



Step 1: Introduce the activity

Explain that everyone experiences different emotions and that nature can help us feel calm, safe, and balanced.



Step 2: Emotion check-In

Invite children to choose an emotion card, point to a feelings symbol, or describe how they are feeling at the beginning of the activity.



Step 3: Nature walk for feelings

Take a slow walk through the outdoor area and encourage children to observe natural objects that match their current emotions.



Step 4: Collect a "Feeling Object"

Children choose one natural item (leaf, stone, flower, twig, feather, etc.) that represents how they feel today.

4.A Instructions



Step 5: Calm breathing with nature

Children sit comfortably and hold their chosen object while practicing slow breathing. Encourage them to notice sounds, smells, and movements in nature.



Step 6: Share and reflect

Children are invited to share why they selected their object and how it connects to their feelings. Alternative communication methods may be used when needed.



Step 7: Create a Nature calm circle

Place the collected objects in a circle and discuss how nature can help when we feel sad, angry, worried, excited, or overwhelmed.



Step 8: Emotion check-out

At the end of the activity, children revisit the emotion cards or feelings scale and identify how they feel now. Discuss any changes they noticed.

4.B Emotion tree: growing feelings in nature



Location

This activity takes place in a nature school, forest area, school garden, park, or outdoor learning space where children have access to trees, plants, and natural materials. The natural environment provides a calming atmosphere that encourages reflection, emotional expression, and connection with nature. A quiet area with one large tree or a designated "Emotion Tree" is recommended.



Group size

The activity is most effective with groups of 6 - 12 children. Children may participate individually or in pairs while sharing ideas during group discussions. The activity promotes both personal reflection and social-emotional learning.



Difficulty

Easy. The activity is highly adaptable and suitable for children with different developmental levels, communication styles, and emotional needs.



Duration

Approximately 30 - 40 minutes. The activity can also become an ongoing emotional regulation routine, repeated weekly throughout the school year.

4.B Emotion tree: growing feelings in nature



Materials & equipment

- Collected leaves, sticks, flowers, or stones
- Emotion cards or visual emotion symbols
- String or ribbons (optional)
- Paper leaves and pencils (optional)
- AAC supports or communication boards
- Visual instruction cards



Sensory profile

This activity provides visual, tactile, auditory, and emotional sensory experiences. Children touch natural materials, observe nature, listen to outdoor sounds, and connect emotions with symbolic objects. The activity promotes calm reflection and emotional self-awareness.



Safety notes

Ensure that children collect only safe natural materials. Avoid poisonous plants, thorny branches, or materials that may cause allergic reactions. Adult supervision should be maintained throughout the activity.



Goals / Skills supported

- Recognise and label emotions
- Develop emotional awareness
- Improve self-expression
- Build empathy and social understanding
- Support emotional regulation
- Encourage reflection and mindfulness
- Strengthen communication skills
- Foster connection with nature

4.B Instructions



Step 1: Introduce the Emotion tree

Gather children around a tree and explain that just like trees change throughout the seasons, our feelings also change throughout the day.



Step 2: Emotion Check-In

Invite children to identify how they are feeling using emotion cards, pictures, words, gestures, or AAC supports.



Step 3: Find a Nature Symbol

Children search for a natural object that represents their emotion. For example:

- A bright flower may represent happiness.
- A strong stick may represent confidence.
- A curled leaf may represent tiredness.
- A rough stone may represent frustration.



Step 4: Visit the Emotion Tree

Children bring their chosen object to the Emotion Tree and place it nearby or attach it using ribbons if appropriate.

4.B Instructions



Step 5: Share Feelings

Each child is invited to explain why they selected their object and how it represents their emotion. Alternative communication methods are encouraged.



Step 6: Nature Calming Moment

Guide children through slow breathing while looking at the tree. Encourage them to notice the movement of branches, leaves, and sounds around them.



Step 7: Growing Positive Emotions

Ask children what might help their emotion grow into a positive feeling. For example:

- What can help a worried feeling become calmer?
- What can help an angry feeling become peaceful?



Step 8: Reflection Circle

Gather around the tree and discuss:

- Did anyone choose similar objects?
- How do emotions change like nature?
- What helps us feel calm and safe?

05

Physical/ Movement-based activities



5.A Animal Movement Adventure



Location

This activity can take place in a kindergarten classroom with enough free space, a school gymnasium, or an outdoor playground. Outdoor settings are particularly beneficial because they provide children with more room to move freely and explore different types of movements. The activity can also be adapted for indoor use during poor weather by rearranging classroom furniture to create a safe movement area.



Group size

The activity is suitable for small groups of 4 to 8 children, allowing the educator to provide individual guidance and encouragement. It can also be implemented with the whole class by dividing children into smaller groups that take turns. This flexibility makes it appropriate for different classroom sizes and teaching contexts.



Difficulty

The activity is designed as an easy movement experience that is accessible to most preschool children. The educator can simplify or extend the movements according to each child's abilities, ensuring that every participant feels successful and included. The emphasis is on participation, creativity, and enjoyment rather than correct performance.



Duration

The activity lasts approximately 15–20 minutes. This duration matches the typical attention span of young children and provides enough time to introduce several different animal movements without causing fatigue. Additional rounds can be added if children remain engaged.

5.A Animal Movement Adventure



Materials & equipment

- Animal picture cards or flashcards
- Cones or floor markers
- Music player (optional)
- Open, obstacle-free space
- Soft mats (optional for crawling activities)



Sensory profile

The activity provides rich multisensory experiences. Children respond to colourful visual prompts, listen carefully to instructions and animal sounds, and engage their proprioceptive and vestibular systems through crawling, jumping, balancing, stretching, and running. These varied sensory experiences support body awareness, motor planning, and sensory integration while keeping children actively involved.



Safety notes

Before beginning, the educator should ensure that the activity area is free from obstacles, slippery surfaces, or objects that could cause children to trip. Sufficient space should be provided between participants to reduce the risk of collisions. Each movement should be demonstrated clearly, and children should be encouraged to move at their own pace. Alternative movements can be offered for children with different physical abilities or additional support needs to ensure safe and inclusive participation.



Goals / Skills supported

This activity promotes the development of gross motor skills, balance, coordination, and overall physical fitness. It also strengthens listening skills, attention, imagination, and the ability to follow instructions. As children imitate different animals together, they practise social interaction, cooperation, and self-confidence while enjoying active play.

7.A Instructions



Step 1: Introduce the Animal Movement Activity

Explain to children that they will explore different ways of moving by pretending to be various animals. Encourage them to use their imagination and have fun while moving safely around the space.



Step 2: Present the Animal Picture Cards

Show children a series of animal picture cards and discuss the animals briefly. Ask them to think about how each animal moves before demonstrating the movement.



Step 3: Imitate Animal Movements

Invite children to move around the area by copying the movements of different animals. Examples may include:

- Hopping like frogs
- Crawling like bears
- Slithering like snakes



Step 4: Explore different patterns

Encourage children to experiment with a variety of movement styles, speeds, and directions while imitating each animal. Allow them to use the available space freely and safely.

7.A Instructions



Step 5: Observe and Compare Movements

After each animal movement, engage children in a discussion about how the animal moves and what makes its movement different from the others. Encourage them to notice features such as speed, balance, body position, and coordination.



Step 6: Encourage Creativity and Participation

Support children as they confidently explore new ways of moving. Provide positive feedback and encourage them to express themselves creatively through their animal actions.



Step 7: Share and Reflect

Gather children together to reflect on the activity. Invite them to talk about their favorite animal movement, describe what they learned, and discuss the physical skills they practiced, such as balance, coordination, body control, and movement awareness.

5.B Movement Circuit Challenge



Location

This activity is best conducted in a school gymnasium, sports hall, playground, or any outdoor area that provides enough space for multiple activity stations. It can also be organised in a large classroom if furniture is moved to create safe movement zones. Outdoor environments are particularly suitable because they encourage active participation and allow students to move freely between stations.



Group size

The activity is appropriate for classes of 8–24 students. Learners can work individually, in pairs, or in small groups, rotating through the different stations together. Working collaboratively encourages communication, peer support, and positive social interaction while allowing every child to remain actively involved throughout the activity.



Difficulty

This activity offers a moderate level of physical challenge and can easily be adapted to suit different ages and fitness levels. The educator may increase or decrease the number of repetitions, adjust the complexity of movements, or modify equipment to ensure that every student experiences success while continuing to develop their physical abilities.



Duration

The circuit requires approximately 25–30 minutes to complete, including the introduction, demonstration of each station, activity time, and a short reflection at the end. The flexible structure allows teachers to shorten or extend the session depending on lesson objectives and available time.

5.B Movement Circuit Challenge



Materials & equipment

- Cones
- Hoops
- Jump ropes
- Beanbags
- Stopwatch or timer
- Balance beam or floor tape
- Station cards with activity instructions (optional)
- Water bottles for hydration



Sensory profile

Students receive continuous visual, auditory, and proprioceptive input as they move through the circuit. They follow visual station signs, listen to instructions and timing cues, and perform activities that involve running, balancing, throwing, jumping, and changing direction. These experiences support motor coordination, spatial awareness, balance, and overall physical confidence.



Safety notes

Before the activity begins, the educator should inspect all equipment and demonstrate each station clearly. Students should be reminded to complete movements with control rather than speed and to maintain a safe distance from one another while rotating between stations. Regular water breaks should be encouraged, particularly during outdoor sessions or warm weather, and any activities should be adapted to meet the needs of students with differing physical abilities.



Goals / Skills supported

he movement circuit supports the development of cardiovascular fitness, muscular strength, endurance, balance, agility, coordination, and motor planning. At the same time, students strengthen communication, teamwork, resilience, problem-solving, and self-confidence as they encourage one another and work towards completing each challenge successfully.

7.A Instructions



Step 1: Introduce the Movement Circuit

Explain to children that they will participate in a fun movement circuit designed to develop their physical skills, coordination, and fitness through a variety of activity stations.



Step 2: Set Up and Demonstrate the Stations

Introduce each activity station and demonstrate the correct way to complete the movements. Show students how to safely use equipment such as cones, hoops, beanbags, and balance markers.



Step 3: Begin the Circuit Rotation

Divide students into small groups and encourage them to rotate through the stations, completing each challenge at their own pace while following instructions and safety guidelines.



Step 4: Complete Movement Challenges

Children participate in different activities such as:

- Zigzag running around cones
- Jumping through hoops
- Balancing along a marked line

7.A Instructions



Step 5: Encourage Teamwork and Safe Participation

Throughout the circuit, the educator provides encouragement, promotes cooperation among students, and reminds them to focus on correct movement techniques and safe participation.



Step 6: Observe and Support Skill Development

Monitor students as they move through the stations, offering guidance and positive feedback to help improve confidence, coordination, and physical performance.



Step 7: Reflect and Conclude the Activity

Gather students together at the end of the circuit to discuss their experiences. Encourage them to share which activities they enjoyed most and identify the physical skills they developed during the session.

06

STEAM activities in nature



6.A Water Play Lab: Exploring Water Through Nature



Location

This activity is designed to take place in an outdoor learning environment, such as a school garden, shaded courtyard, or safe open area near natural surroundings. The outdoor setting allows children to explore water as part of nature, observe how it moves, changes, and interacts with soil, stones, leaves, and other natural materials. A calm, shaded, and accessible space is recommended to support sensory comfort and safe movement.



Group size

This activity is most effective in small to medium-sized groups of approximately 6–12 children, allowing educators to provide guidance and individualized support when needed. Children may work independently, in pairs, or in small collaborative groups depending on their communication style, sensory preferences, and comfort level. Smaller groups help create a calmer and more predictable environment, which is especially beneficial for autistic and neurodivergent learners, while also encouraging social interaction, turn-taking, and cooperative exploration.



Difficulty

The activity is considered easy to moderate, as it is highly adaptable to different developmental and learning levels. Basic tasks such as pouring, scooping, and observing are accessible to younger children and children with varying abilities, while more advanced elements, such as prediction, experimentation, and problem-solving, can be introduced for extended learning. The open-ended nature of the activity allows educators to adjust the complexity, pace, and level of support according to the needs of each group.



Duration

The initial activity can be completed within approximately 45–60 minutes, depending on the number of exploration stations and the level of discussion included. Additional shorter sessions of 10–15 minutes may be implemented over several days or weeks to extend learning through repeated experimentation, observation, and reflection. This flexible structure allows the activity to become part of an ongoing outdoor learning routine rather than a one-time experience, supporting consistency, familiarity, and deeper engagement with sensory and scientific exploration.

6.A Water Play Lab: Exploring Water Through Nature



Materials & equipment

- Water trays, bowls, or shallow containers
- Cups, spoons, funnels, small jugs
- Natural materials: leaves, stones, twigs, soil, flowers
- Objects for floating/sinking exploration
- Towels or cloths
- Visual instruction cards
- Optional: magnifying glasses, measuring cups, recording sheet



Sensory profile

This activity offers tactile, visual, and auditory sensory experiences through water exploration, natural textures, movement, and sound. The repetitive actions of pouring, scooping, and observing water may support emotional regulation and focus, particularly for autistic and neurodivergent learners. Sensory input can be adapted by offering tools, gloves, smaller amounts of water, or observation-only participation according to each child's comfort level.



Safety notes

The activity should take place under adult supervision in a safe outdoor area free from slippery surfaces or harmful objects. Only shallow containers and child-safe materials should be used, and natural elements should be checked beforehand for allergens or sharp items. Handwashing routines should be encouraged after the activity to support hygiene and responsibility.



Goals / Skills supported

- Understand basic water properties: movement, flow, floating, sinking
- Explore cause and effect through pouring, mixing, and testing
- Develop observation, prediction, and problem-solving skills
- Strengthen motor skills through scooping, pouring, transferring
- Support sensory regulation through calming water-based play
- Encourage communication, collaboration, and turn-taking
- Promote curiosity about nature and natural materials
- Science: Explore floating, sinking, absorption, water movement, and material properties
- Technology: Use simple tools such as funnels, cups, and measuring containers
- Engineering: Build simple water pathways using natural materials and containers
- Art: Create water patterns, natural arrangements, or "water worlds"
- Mathematics: Compare quantities, count objects, measure water, and classify materials

6.A Instructions



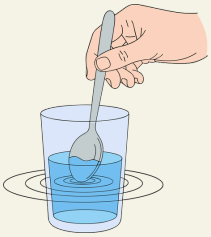
Step 1: Introduce the activity

Begin by explaining that children will explore how water moves and interacts with natural materials.



Step 2: Explore the materials

Allow children to look at and touch the available materials, such as stones, leaves, twigs, and soil.



Step 3: Pour and transfer water

Children use cups, spoons, funnels, and jugs to pour water between containers and observe movement.



Step 4: Floating and sinking experiment

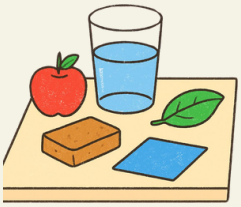
Children choose natural objects and predict whether each one will float or sink before testing it.



Step 5: Create a water pathway

Using trays, containers, stones, and leaves, children try to guide water from one point to another.

6.A Instructions



Step 6: Observe and discuss

Encourage children to notice what happened: Which objects floated? Which absorbed water? Which changed?



Step 7: Record the findings

Children can draw what they observed, use stickers/symbols, or verbally share their discoveries.



Step 8: Reflection and clean-up

End with a short reflection and guide children to help clean the area, supporting responsibility and routine.

6.B Build your own mini ecosystem



Location

This activity is designed to take place primarily in an outdoor learning environment such as a school garden, park, or natural green space within or near the school. Conducting the activity outdoors allows students to directly interact with natural elements, observe ecosystems in their real context, and develop a deeper sensory and emotional connection with nature. The outdoor setting supports experiential learning, encourages exploration and movement, and provides authentic materials that enhance the construction of the mini ecosystem. A calm and structured outdoor space is recommended to ensure accessibility, safety, and comfort for all learners, including neurodivergent children.



Group size

The activity is suitable for small to medium groups of approximately 10–20 students. Students can work individually or in pairs to encourage collaboration while maintaining personal space and autonomy, which is particularly beneficial for neurodivergent learners.



Difficulty

Moderate. The activity involves basic construction, observation, and simple scientific concepts such as ecosystems, plant needs, and environmental balance. Instructions can be easily adapted to different cognitive and developmental levels.



Duration

Initial setup requires approximately 45–60 minutes. Follow-up observation sessions (10–15 minutes) can be conducted over several days or weeks, allowing this activity to evolve into a long-term classroom project.

6.B Build your own mini ecosystem



Materials & equipment

- transparent jars or small containers
- soil
- small plants or moss
- natural elements (stones, leaves, twigs)
- water, small tools (spoons or scoops)
- spray bottles
- optional labels or markers for documentation.



Sensory profile

This activity provides a multi-sensory experience, including tactile (soil, plants), visual (layers, growth), and olfactory (natural scents) stimulation. Sensory input can be adjusted by offering gloves, tools instead of direct contact, or alternative materials for students with sensitivities.



Safety notes

Ensure that all materials used are non-toxic and safe for children. Supervise the use of small tools and monitor students to avoid ingestion of materials. Encourage handwashing after the activity. Be mindful of allergies related to plants or soil.



Goals / Skills supported

- Understand the basic concept of an ecosystem and the interaction between living and non-living elements
- Develop awareness of environmental balance and sustainability
- Build responsibility through caring for a living system over time
- Fine motor skills through handling materials
- Observation and critical thinking
- Problem-solving and experimentation
- Emotional regulation and sensory engagement
- Collaboration (when working in pairs or groups)
- Science: Understanding plant needs (water, light, soil) and ecosystem interactions
- Technology: Observing and documenting changes (optionally using photos or simple digital tools)
- Engineering: Constructing a functional mini ecosystem with layered materials
- Art: Creative arrangement and design of the ecosystem elements
- Mathematics: Measuring quantities (soil, water), recognizing patterns and changes over time

6.B Instructions



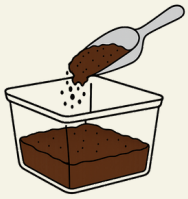
Step 1: Explore Nature

Students explore the outdoor area and collect natural materials such as soil, leaves, small stones, and plants.



Step 2: Prepare the Container

Students receive a transparent container and prepare it for building their mini ecosystem.



Step 3: Add Soil Layer

Students add a base layer of soil to support plant life.



Step 4: Add Plants and Natural Elements

Students place plants, moss, leaves, and small stones to create their ecosystem.



Step 5: Add Water

Students carefully add a small amount of water to support the ecosystem.



Step 6: Place in Natural Light

The ecosystems are placed in a suitable outdoor or semi-outdoor area with natural light.



Step 7: Observe and Reflect

Students observe changes over time and record their findings through drawing, symbols, or discussion.

07

Creative/ artistic activities



7.A Color Hunt & Nature Art Board



Location

This activity is designed to take place in an outdoor learning environment such as a school garden, park, playground, or natural green area. The outdoor setting encourages children to explore colors, textures, shapes, and patterns directly within nature while supporting movement, sensory engagement, and experiential learning. A calm and accessible outdoor space allows children to interact freely with natural elements and observe the diversity of the environment through creative exploration.



Group size

This activity is suitable for small to medium-sized groups of approximately 6–15 children. Children may participate individually, in pairs, or in collaborative groups depending on their preferences and communication styles. Smaller group arrangements help create a supportive and less overwhelming environment, particularly for autistic and neurodivergent learners, while still encouraging cooperation, discussion, and shared discovery.



Difficulty

The activity is considered easy to moderate, as it combines simple exploration tasks with creative artistic expression. Younger children or children requiring additional support may focus on identifying and collecting colors and textures, while older children can expand the activity through classification, pattern creation, storytelling, or detailed artistic composition. The flexible structure allows educators to adapt the activity to different developmental levels and sensory needs



Duration

The activity can be completed within approximately 45–60 minutes, including outdoor exploration and art creation. Additional follow-up sessions may be added for extended observation, collaborative artwork, or seasonal nature exploration. The activity can also become part of an ongoing outdoor learning routine that changes according to weather, seasons, or environmental themes.

7.A Color Hunt & Nature Art Board



Materials & equipment

- Cardboard or large paper sheets
- Glue or tape
- Crayons, markers, or colored pencils
- Small baskets or containers for collecting materials
- Natural materials: leaves, flowers, stones, sticks, grass, petals
- Optional: magnifying glasses, color cards, visual prompts



Sensory profile

This activity provides visual, tactile, and proprioceptive sensory experiences through movement, outdoor exploration, and interaction with natural textures and colors. Children engage with soft, rough, smooth, and uneven materials while observing visual contrasts and patterns in nature. Sensory participation can be adapted by allowing children to observe instead of touch, use tools or gloves, or select preferred materials according to their comfort level.



Safety notes

The activity should take place under adult supervision in a safe outdoor area free from harmful plants or dangerous objects. Natural materials should be checked beforehand to avoid allergens, insects, or sharp elements. Children should be encouraged not to place collected materials near their mouth or face and to wash their hands after the activity. Clear boundaries and routines should be established to ensure safe exploration and movement.



Goals / Skills supported

- Encourage observation and exploration of colors, textures, and patterns found in nature
- Support creativity and artistic self-expression through natural materials
- Develop fine motor skills through collecting, sorting, arranging, and gluing objects
- Promote sensory exploration through tactile and visual interaction with natural elements
- Strengthen observation, comparison, and problem-solving skills
- Encourage curiosity and active engagement with the outdoor environment
- Support communication, collaboration, and shared exploration among peers

7.A Color Hunt & Nature Art Board



Goals / Skills supported

- Allow flexible participation according to individual sensory preferences and communication styles
- Foster emotional connection with nature and environmental awareness
- Science: Observe colors, textures, and patterns found in nature
- Technology: Use simple tools such as magnifying glasses or collection containers
- Engineering: Arrange and construct natural materials into organized artistic compositions
- Art: Create nature-inspired collages, patterns, and visual designs
- Mathematics: Sort, classify, compare, and group materials by color, size, or shape

7.A Instructions



Step 1: Introduce the Color Hunt

Explain to children that they will explore nature to discover different colors, textures, and patterns in the environment.



Step 2: Explore the Outdoor Area

Children walk through the outdoor space and collect natural materials such as leaves, flowers, stones, sticks, or grass.



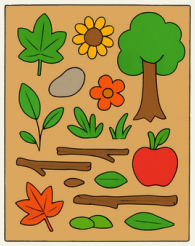
Step 3: Observe and Compare

Encourage children to look closely at the collected items and notice similarities and differences in color, shape, texture, and size.



Step 4: Sort the Materials

Children group the collected materials according to categories such as color, texture, or type.



Step 5: Create the Nature Art Board

Using cardboard or large paper, children arrange and glue their materials to create artistic compositions, patterns, or nature scenes.



Step 6: Share and Reflect

Children are invited to present or describe their artwork through words, drawings, gestures, or symbols according to their comfort level.



Step 7: Clean-Up and Closing

Guide children to clean the area and return unused natural materials respectfully to the environment when possible.

7.B Nature Mandalas: Patterns in Nature



Location

This activity is designed to take place in an outdoor learning environment such as a school garden, park, forest area, or natural playground. The outdoor setting encourages children to explore natural materials directly within their environment while developing a deeper connection with nature through observation, creativity, and mindful interaction. A calm and structured outdoor space supports concentration, sensory regulation, and collaborative participation, particularly for autistic and neurodivergent learners.



Group size

This activity is suitable for small to medium-sized groups of approximately 6–15 children. Children may work individually, in pairs, or collaboratively depending on their preferences and communication styles. Smaller groups help maintain a calm and predictable atmosphere while allowing educators to provide guidance and individualized support when needed.



Difficulty

The activity is considered easy to moderate, as it combines simple collection and arrangement tasks with creative thinking and pattern recognition. Younger children may focus on basic shapes and color matching, while older children can create more detailed and symmetrical mandalas. The flexible and open-ended structure allows the activity to be adapted to different developmental levels, abilities, and sensory needs.



Duration

The activity can be completed within approximately 45–60 minutes, including outdoor exploration, material collection, and mandala creation. Additional sessions may be implemented for seasonal themes, collaborative group mandalas, or reflective discussions about patterns and nature. The activity may also become part of an ongoing outdoor mindfulness or creative learning routine.

7.B Nature Mandalas: Patterns in Nature



Materials & equipment

- Leaves, flowers, sticks, stones, grass, petals, pinecones, or other natural materials
- Outdoor mats or flat surfaces
- Small baskets or containers for collecting materials
- Optional: visual examples of mandalas, magnifying glasses, color cards, cameras/tablets for documentation



Sensory profile

This activity provides visual, tactile, and proprioceptive sensory experiences through outdoor movement and interaction with natural textures, shapes, and patterns. The repetitive and organized process of arranging materials into circular designs may support emotional regulation, focus, and mindfulness. Sensory participation can be adapted by allowing children to observe, use tools instead of direct touch, or select preferred materials according to their comfort level.



Safety notes

The activity should take place under adult supervision in a safe outdoor area free from harmful plants, sharp objects, or unsafe terrain. Natural materials should be checked beforehand for allergens, insects, or hazardous elements. Children should be encouraged to collect materials respectfully from the environment and wash their hands after the activity. Clear boundaries and routines should be established to support safe and organized participation.



Goals / Skills supported

- Encourage creativity and artistic expression through natural materials
- Develop observation and pattern-recognition skills
- Support fine motor development through collecting and arranging objects
- Promote sensory exploration through tactile and visual interaction with nature
- Encourage focus, patience, and mindfulness through repetitive creative processes
- Strengthen problem-solving and decision-making skills during design creation
- Foster collaboration and communication during shared exploration and group mandalas
- Support emotional regulation and calm engagement with the outdoor environment
- Promote environmental awareness and appreciation of natural diversity

7.B Nature Mandalas: Patterns in Nature



Goals / Skills supported

- Science: Observe natural patterns, textures, colors, and shapes found in the environment
- Technology: Use simple tools such as magnifying glasses or cameras for observation and documentation
- Engineering: Arrange and balance natural materials into structured circular compositions
- Art: Create symmetrical and nature-inspired mandala designs
- Mathematics: Explore symmetry, shapes, sequencing, counting, and spatial organization

7.B Instructions



Step 1: Introduce Nature Mandalas

Explain that mandalas are circular patterns created using natural materials found in the environment.



Step 2: Explore the Outdoor Area

Children walk through the outdoor space and collect leaves, flowers, stones, sticks, and other safe natural elements.



Step 3: Observe and Sort Materials

Encourage children to compare colors, textures, sizes, and shapes before organizing the materials into groups.



Step 4: Begin the Mandala Design

Children start creating circular patterns by placing materials from the center outward.



Step 5: Expand and Decorate

Children continue adding layers, colors, and repeated patterns to complete their mandala.



Step 6: Observe and Reflect

Invite children to observe each other's creations and discuss patterns, colors, or feelings connected to the activity.



Step 7: Clean-Up and Nature Respect

Guide children to respectfully return unused natural materials to the environment when possible and clean the activity area.

08

Daily- routine outdoor activities



8.A Weather Helper Walk



Location

This activity takes place in the school playground, garden, or another safe outdoor area and is designed to become part of the children's morning routine. Before entering the classroom, children spend a few minutes observing the weather and their natural surroundings. The activity can be carried out throughout the year, allowing children to experience seasonal changes first-hand.



Group size

The activity is suitable for the whole class, allowing children to make observations together and share ideas about the weather. Alternatively, children can work in pairs or small groups of three to five, encouraging cooperation, communication, and peer learning. Small groups also allow the educator to provide more individual support while ensuring that every child has the opportunity to participate actively in the observations and movement activities.



Difficulty

The activity is designed to be easy and accessible for all preschool children. Observation tasks and movement activities can be adapted according to children's developmental level, confidence, and physical abilities. The educator may simplify tasks for younger children or introduce additional questions and movement challenges for older preschoolers. The focus is on developing daily routines, curiosity, and active participation rather than achieving correct answers.



Duration

The activity takes approximately 15–20 minutes and is intended to become a regular part of the morning routine before classroom learning begins. This time allows children to observe the weather, discuss their findings, complete a short movement activity related to the day's weather conditions, and update the classroom weather chart. The duration is flexible and can be shortened on busy school days or extended when children show particular interest in exploring the outdoor environment.

8.A Weather Helper Walk



Materials & equipment

- Weather chart
- Picture cards showing different weather conditions
- Magnifying glasses (optional)
- Clipboards and crayons
- Appropriate outdoor clothing



Sensory profile

Children observe the colours of the sky, feel the temperature and wind, listen to birds or other environmental sounds, and move through different outdoor surfaces. These experiences strengthen sensory awareness while helping children connect daily routines with natural changes.



Safety notes

The outdoor area should be checked before the activity begins. Children should remain within designated boundaries and wear clothing suitable for the weather. The educator should remind children not to touch unknown plants or insects.



Goals / Skills supported

The activity promotes observation skills, environmental awareness, vocabulary development, gross motor skills, independence, and the establishment of healthy outdoor routines.

7.B Instructions



Step 1: Introduce the Weather Helper Activity

Explain to children that they will become “Weather Helpers” and work together to observe and discuss the daily weather before starting their lessons.



Step 2: Observe the Weather

xInvite children to look outside and carefully observe the sky and weather conditions. Encourage them to identify whether it is sunny, cloudy, windy, rainy, or snowy.



Step 3: Discuss Appropriate Clothing

Guide children in discussing what clothing is suitable for the day’s weather. Encourage them to think about items such as jackets, hats, boots, sunglasses, or raincoats.



Step 4: Complete a Weather-Themed Movement

Lead children in a short movement activity related to the weather.
Examples may include:

- Stretching towards the sun
- Spinning like the wind
- Tiptoeing like falling snow



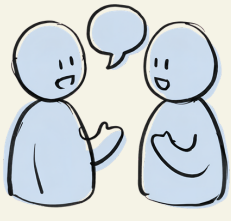
Step 5: Explore Weather and Movement Connections

Encourage children to talk about how their movements represent different weather conditions and how weather can affect the way people move and dress.



Step 6: Update the Weather Chart

Invite children to record the day’s weather by adding the appropriate symbol, picture, or label to the weather chart.



Step 7: Reflect and Begin the Day

Gather children for a brief reflection on the weather observations and movement activity. Encourage them to share their favorite movement before transitioning to the day’s lessons.

8.B Outdoor Morning Energiser



Location

This activity can take place in the school playground, sports field, courtyard, or any safe outdoor space before lessons begin. It is designed to become part of the school's daily routine, helping students transition from home to the classroom while encouraging regular physical activity in the fresh air. The activity can be implemented throughout the year, with adjustments made according to weather conditions.



Group size

The activity is suitable for the whole class or for smaller groups of six to ten students. Completing the routine together promotes a sense of community and helps establish a positive start to the school day. Students can also work in pairs during some activities, encouraging cooperation and peer support while ensuring everyone remains actively involved.



Difficulty

The activity is easy to moderate and can be adapted to suit students with different fitness levels and physical abilities. Movements can be simplified or made more challenging by adjusting the number of repetitions or the pace of the exercises. The emphasis is on participation, building healthy habits, and preparing students physically and mentally for learning.



Duration

The routine lasts approximately 15–20 minutes and can be incorporated into the daily timetable before the first lesson. This short period of outdoor movement helps students release energy, improve concentration, and prepare for classroom activities without causing fatigue.

8.B. Outdoor Morning Energiser



Materials & equipment

- Cones or floor markers
- Music player (optional)
- Stopwatch or timer
- Activity cards with movement prompts (optional)
- Water bottles



Sensory profile

The activity combines visual, auditory, vestibular, and proprioceptive input through coordinated movement in an outdoor environment. Students experience fresh air, natural light, and changing weather conditions while practising stretching, balancing, jumping, and walking activities that support body awareness and motor coordination.



Safety notes

The educator should inspect the outdoor area before beginning the activity to ensure it is free from hazards. Students should wear suitable footwear and clothing appropriate for the weather and maintain enough personal space while moving. Exercises should be demonstrated clearly, and alternative movements should be offered when necessary to accommodate different physical abilities.



Goals / Skills supported

The activity promotes healthy daily habits, physical fitness, coordination, balance, flexibility, self-regulation, and concentration. It also supports students' emotional well-being by providing an active and enjoyable transition into the school day while encouraging positive social interaction.

7.B Instructions



Step 1: Introduce the Morning Movement Routine

Explain to students that they will begin each day with a short outdoor movement routine to prepare their bodies and minds for learning.



Step 2: Begin with Gentle Stretches

Guide students through simple stretches for the arms, legs, shoulders, and back. Encourage slow, controlled movements and safe use of space.



Step 3: Practise Balance Exercises

Invite students to complete simple balance activities, such as standing on one leg, walking along a line, or holding a balanced pose for several seconds.



Step 4:Complete Light Jogging

Encourage students to jog gently around the outdoor area. Remind them to maintain a comfortable pace and remain aware of others.



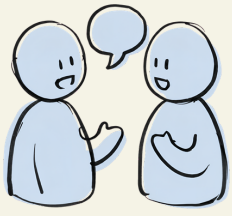
Step 5: Perform Jumping Activities

Lead students through simple jumping movements, such as jumping in place, hopping from side to side, or jumping over markers.



Step 6: Add Small Variations

Keep the routine familiar while adding occasional seasonal movements, new balance challenges, or partner activities to maintain interest and participation.



Step 7: Breathe and Reflect

Finish with a short breathing exercise and a quiet moment of reflection. Encourage students to notice how their bodies feel and prepare themselves to begin learning calmly and with focus.

References

Ayres, A. J. (1972). Sensory integration and learning disorders. Western Psychological Services.

Beames, S., Higgins, P., Nicol, R. (2012). Learning Outside the Classroom: Theory and Guidelines for Practice. Routledge; New York, NY, USA.

Beyond the Classroom: Why Nature is a Powerful Teacher for Autistic Young Adults. https://meristem.pro/independent-living/beyond-the-classroom-why-nature-is-a-powerful-teacher-for-autistic-young-adults/ [Accessed Feb. 19, 2026].

Bradley, K., & Male, D. (2017). “Forest School is muddy and I like it”: Perspectives of young children with autism spectrum disorders, their parents and educational professionals. Educational & Child Psychology, 34(2), 80–94.

Bratman, G.N., Hamilton, J.P., Daily, G.C. (2012). The impacts of nature experience on human cognitive function and mental health. Ann. N. Y. Acad. Sci.; 1249:118–136.

Conn, C. (2015). ‘Sensory highs,’ ‘vivid rememberings’ and ‘interactive stimming’: Children’s play cultures and experiences of friendship in autistic autobiographies. Disability & Society, 30(8), 1192–1206.

Cordiano, T. S., Lee, A., Wilt, J., Elszasz, A., Damour, L. K., Russ, S. W. (2019). Nature-Based Education and Kindergarten Readiness: Nature-Based and Traditional Preschoolers are Equally Prepared for Kindergarten. The International Journal of Early Childhood Environmental Education, 6(3), p. 18. North American Association for Environmental Education.

Dadvand, P., Nieuwenhuijsen, M. J., Esnaola, M., et al. (2015). Green spaces and cognitive development in primary schoolchildren. Proceedings of the National Academy of Sciences, 112(26), 7937–7942.

Fan, M. S. N., Li, W. H. C., Ho, L. L. K., Phiri, L., & Choi, K. C. (2023). Nature-Based Interventions for Autistic Children: A Systematic Review and Meta-Analysis. JAMA Network Open, 6(12), e2346715. https://doi.org/10.1001/jamanetworkopen.2023.46715 [Accessed Feb. 7, 2026].

What is the Forest School Association? www.forestschoolassociation.org [Accessed Feb. 10, 2026].

Forest School Foundation (FSF) (2020a, Oct. 9). A brief history of forest schools around the world. https://www.growingwildforestschool.org/post/the-brief-history-heritage-of-forest-schools-around-the-world [Accessed Feb. 7, 2026].

Forest School Foundation (FSF) (2020b). Forest school history & philosophy. https://www.theforestschoolfoundation.org/background-information-history [Accessed Feb. 7, 2026].

Fjørtoft, I. (2004). Landscape as Playscape: The Effects of Natural Environments on Children’s Play and Motor Development. Child. Youth Environ; 14:21–44.

Gazdula, J., Gazdula, E. & McGee, M. (2022). Preservation of learning outside the primary classroom: A comparison of policy and practice in Danish udeskole (outdoor school) and English primary Outdoor Education (OE). Educational Futures, [online] Vol. 13(1). Available at: https://educationstudies.org.uk/?p=17327 [Accessed Feb. 2, 2026].

Holmberg, S., & Gunnarsson, A. B. (2025). Animal-assisted and nature-based intervention on a farm for young adults with autism and social withdrawal – A one-year follow-up with a socioeconomic approach. Scandinavian Journal of Occupational Therapy, 32(1).

Jiang, B., Chang, C.-Y., Sullivan, W.C. (2014). A dose of nature: Tree cover, stress reduction, and gender differences. Landsc. Urban Plan; 132:26–36.

Kaplan, R., & Kaplan, S. (1989). The experience of nature: A psychological perspective. Cambridge University Press.

Mann, J., Gray, T., Truong, S., Sahlberg, P., Bentsen, P., Passy, R., Ho, S., Ward, K., & Cowper, R. (2021). A Systematic Review Protocol to Identify the Key Benefits and Efficacy of Nature-Based Learning in Outdoor Educational Settings. International journal of environmental research and public health, 18(3), 1199.
https://doi.org/10.3390/ijerph18031199

Murray, D., Lesser, M., & Lawson, W. (2005). Attention, monotropism and the diagnostic criteria for autism. Autism, 9(2), 139–156.

Pavey, B. (2006). The Forest School and inclusion: A project evaluation.

Sandell, K., Öhman, J. (2010). Educational potentials of encounters with nature: Reflections from a Swedish outdoor perspective. Environ. Educ. Res.; 16:113–132.

Taylor, A. F., and Kuo, F. E. (2009). Children with attention deficits concentrate better after walk in the park. Journal of Attention Disorders, 12(5), 402–409.

The Sensory Benefits of Nature Play: Why the Outdoors Calms the Nervous System. https://www.naturemoves.com.au/blog/the-sensory-benefits-of-nature-play-why-the-outdoors-calms-the-nervous-system [Accessed Feb. 17, 2026].

Wilcock, A. (2006). An Occupational Perspective on Health (2nd ed.), Thorofare, NJ: Slack.

Wilson, E. O. (1984). Biophilia. Harvard University Press.

Wu, J., & Jackson, L. (2017). Inverse relationship between urban green space and childhood autism in California elementary school districts. Environment International, 107, 140–146.

Co-funded by
the European Union



Thank You

ViModo
Research & Education Hub

СИНА СВЕТУЛКА

CENTAR ZA AUTIZAM

forest school