



Engaging young children (0–5 years) in nature play

Jasmine B. MacDonald, Kylie Butler and Kristel Alla

Practice guide | November 2023



Overview

This practice guide synthesises research evidence relating to young children’s (0–5 years) engagement in nature play. It covers:

- what nature play is
- factors impacting the likelihood of young children engaging in nature play
- ways to support parents to involve young children in nature play.

Introduction

Early childhood (0–5 years) is a critical period for learning and development. A child's identity, knowledge, capabilities and skills develop significantly during this time and are influenced by family, communities, culture and place (Department of Education [DoE], 2022). Engagement in play provides important opportunities for children to develop in their early years. Play allows children to explore, be curious and imaginative, exercise agency, expand their thinking and enhance their interest in learning (DoE, 2022).

Nature play is associated with young children's positive physical and mental development (Dankiw et al., 2020; Puhakka et al., 2019). Natural environments provide children space for physical movement and creative play opportunities (McClain & Vandermaas-Peeler, 2016).

What is nature play?

Nature play is a specific type of play that is: (a) freely chosen, child-led and unstructured (as opposed to adult-led) and (b) includes interactions with natural elements such as trees, rocks, plants, dirt and water (Agostini et al., 2018; Beery, 2020; Ernst et al., 2019). Nature play activities tend to be physical, imaginative, sensory-rich and collaborative (Beery, 2020; McClain & Vandermaas-Peeler, 2016). Nature play involves being curious about the surroundings, being creative and solving problems (Ernst et al., 2019).

Being largely unstructured and child-led, nature play encourages children to explore their emotions and imagination, and to develop autonomy and decision-making skills (Alme & Reime, 2021; Aslanian et al., 2020; McClain & Vandermaas-Peeler, 2016). Nature play provides children with rich sensory experiences and the opportunity to deepen their ecological knowledge (Beery & Jørgensen, 2018). Children are encouraged to overcome minor challenges and risks, and this can improve self-confidence and lead to positive emotions such as joy (Coates & Pimlott-Wilson, 2019; McClain & Vandermaas-Peeler, 2016). Bush Kinder programs are one of the more common examples of nature play in educational early learning in Australia (refer to the [Further Reading: Resources about Nature Play section](#) at the end of this resource for more information).

Because of the element of risk, some research refers to nature play as 'risky play' or 'adventurous play' (Howe et al., 2021). While the terms nature play and risky play are sometimes used interchangeably, the term risky play is used more broadly to describe play that involves a degree of uncertainty or risk (Brussoni et al., 2015). While there is overlap between the 2, not all nature play is risky, and not all risky play takes place in natural settings. Nature play can involve playing at speed or at height (e.g. running at speed, jumping off objects), being near potentially dangerous elements (e.g. water), using tools or rough and tumble play (Brussoni et al., 2015; Brussoni et al., 2017). Nature play that involves an element of risk can be beneficial for child development and can also be exciting and fun for children.

The purpose of this resource

Although research evidence has highlighted various benefits of nature play (Alme & Reime, 2021; Aslanian et al., 2020; Coates & Pimlott-Wilson, 2019; Dankiw et al., 2020; McClain & Vandermaas-Peeler, 2016; Puhakka et al., 2019), there is less evidence about what factors impact children's engagement in nature play, especially young children's. Knowledge about the factors affecting levels of engagement with nature play during a child's early years can assist practitioners to support parents in: (a) identifying or creating opportunities for young children to engage in nature play; (b) understanding, assessing and managing risk in nature play; and (c) safely supporting children in nature play activities.

This practice guide synthesises research evidence relating to nature play and the engagement of children in their early years (i.e. 0–5 years – hereafter referred to as 'young children'). It covers:

- what nature play is
- factors impacting the likelihood of young children engaging in nature play
- ways to support caregivers to engage young children in nature play.

This resource is for: (a) practitioners who work with young children and/or their caregivers, and (b) managers and program designers in early childhood and parenting support services. It will be particularly useful for social workers, child care workers, playgroup workers and managers, and other workers in early childhood and parenting support services. It is expected that those working in early childhood education, child development and maternal and child health will also find this resource useful.

Ways to 'do' nature play

Some simple nature play ideas for young children (0-5 years) that practitioners could consider: (a) discussing with families for them to try, or (b) incorporating into their own practice with young children:

- Create shapes, letters or objects with loose items (e.g. sticks, leaves, stones).
- Have a picnic or camp out in the backyard.
- Make a mud kitchen.
- Lie on the ground and look at the shapes of swaying trees, clouds or stars.
- Talk about what you can see, hear and feel outside.
- Record information about (a) the insects and birds you see, or (b) the plants or objects you use.
- Use a magnifying glass to explore insects and flowers.
- Feel the grass and leaves or smell flowers and plants.
- Use your bodies in different shapes, patterns, speeds and directions when outside.
- Make an obstacle course over or around natural objects.
- Balance or climb on rocks, boulders or logs.

Factors impacting young children's engagement in nature play

Research suggests there are a range of benefits to young children engaging in nature play (Alme & Reime, 2021; Aslanian et al., 2020; Coates & Pimlott-Wilson, 2019; Dankiw et al., 2020; McClain & Vandermaas-Peeler, 2016; Puhakka et al., 2019). However, the evidence is still emerging as to what makes it more or less likely that a young child will engage in nature play. It is this evidence base that we describe in the rest of this practice guide.

The studies we draw on in this resource come from a range of countries. They vary according to the definitions they use, location, ages of children and specific nature play activities. The findings in this practice guide are drawn from research that has sampled children, parents and educators and asked them what they have found works best.

We have synthesised the findings from these studies to identify common themes; however, these studies have not assessed whether the common themes are linked to actual increased engagement in nature play or whether they generalise in a meaningful way to Australian families. Furthermore, the studies we identified do not address any additional or unique barriers that some families may experience; for example, a lack of green spaces in densely populated urban areas or the needs of children with disability participating in nature play activities.

There is a need for further tailored research to provide practice insights for practitioners working with families in these contexts. In practice, this means it is useful to assess the unique characteristics and experiences of the children and families you work with and their access to natural spaces. This information can help guide the kind of support and information most useful for children and their parents.

Our synthesis of the research on nature play suggests 3 factors impact the likelihood that young children will engage in nature play:

1. [Access to green spaces](#)
2. [Child-related characteristics](#)
3. [Parent health and safety concerns](#).

Practice tips are provided throughout the following sections, focusing on supporting parents to engage their young children in nature play. Citations are provided when these tips come from the research evidence. However, to date, the research literature has few practical insights for improving engagement in nature play. Because of this, we have used educational and government websites (refer to the [Further Reading and Resources section](#) for more information) to develop additional practical tips that align with the findings from the research.

Access to green spaces

Having access to green spaces, or greening¹ existing spaces, can increase child engagement in nature play. Children are more likely to engage in unorganised and creative free play in green spaces compared to non-green spaces (Brussoni et al., 2017; Collado & Corraliza, 2015; Lucas & Dymont, 2010; Puhakka et al., 2019; Tranter & Malone, 2004; Woolley & Lowe, 2013; Zamani, 2016).

Studies from Finland and Canada (Brussoni et al., 2017; Puhakka et al., 2019), for example, have explored the impacts of greening outdoor spaces at early childhood schools. 'Greening' was achieved by introducing more plants and flowers, laying turf or peat blocks, and adding natural materials, such as boulders, sea glass, gravel and sand.

After the outdoor spaces were enhanced through greening, children were more likely to go outside, engage in physical and creative aspects of nature play and spontaneously interact with natural elements during play (Brussoni et al., 2017; Puhakka et al., 2019). Children used natural materials in their play by (Brussoni et al., 2017; Puhakka et al., 2019):

- jumping over, walking on, carrying or throwing materials
- exploring sensory characteristics of natural materials by smelling, touching, listening to or creating sounds with the materials
- using materials to explore, hide behind or balance on, and for make-believe play.

The softer surfaces of natural materials (e.g. grass or sand), compared to asphalt, provided a sense of safety and meant children were more comfortable participating in activities such as swinging, climbing, somersaults or rough and tumble play (Brussoni et al., 2017; Puhakka et al., 2019). Some children also enjoyed relaxing or resting on these surfaces (Puhakka et al., 2019).

¹ Greening involves 'naturalisation, habitat restoration, tree planting, food gardening and similar efforts to bring nature back to urban spaces' (Puhakka et al., 2019, Introduction).



Access to green spaces

- Remember that most outdoor spaces can be suitable for nature play. Natural spaces do not have to be large or remote, and many of the options below are suitable for families living in high density urban areas. Simple ideas include:
 - time spent in a backyard, courtyard or on a balcony
 - a walk around the block, paying attention to trees, plants or the weather
 - time spent in local parks
 - walking local trails or visiting nature reserves.
- Encourage parents to provide regular sessions of outdoor play in natural spaces or with natural materials. This might be during playtime that is usually spent indoors with manufactured toys or electronic devices.
- For play away from the home, encourage parents to prioritise local areas with a variety of natural elements and soft green surfaces, including natural objects that children can (Puhakka et al., 2019):
 - use to climb, roll around, jump off, or rest and relax on
 - manipulate and play imaginatively with.

Greening

Here are some things families could consider to enhance green play at home.

Adding natural elements to an outdoor play space at home:

- Loose items are great for stacking, building, creating shapes, digging and imaginative play. Ideas include:
 - sticks of different lengths
 - dirt, gravel or sand
 - leaves and small plants
 - stones and pebbles
 - gumnuts, bark or feathers.
- Pot plants or planter boxes are a great way to 'green' a small or concrete outdoor space. These can be adjusted to suit the height of the child(ren) that will use them.
- Other options include adding a bird bath or worm farm.

Looking for secondhand items that can be used for planting, digging, making things or exploring things. Ideas include:

- wooden spoons and spades
- magnifying glasses
- baskets, buckets, pots or pans.

Setting aside a small area for a sand pit, mud bath or water play area. These are all great for sensory, imaginative and physical play.

Child-related characteristics

Individual differences between children could affect the kinds of activities they feel comfortable exploring and their engagement in nature play overall. Children who are shy, nervous or lack confidence may be less likely to engage in nature play (McClain & Vandermaas-Peeler, 2016; Oliver et al., 2022). If a child likes to be outdoors (Howe et al., 2021), do adventurous activities (Oliver et al., 2022) or get wet or dirty (McClain & Vandermaas-Peeler, 2016), they may be more engaged with nature play than children who do not like those things. These preferences may be influenced by previous experiences in nature. Preferences may also change over time. For example, a child's confidence may grow with repeated opportunities to interact with natural environments, and with support from adults and peers (McClain & Vandermaas-Peeler, 2016).



Supporting less confident or less experienced children

Parents, educators and peers can help nervous or less confident children develop strategies to support them during nature play and increase their enjoyment in unfamiliar activities. Examples of strategies include encouraging the child to (McClain & Vandermaas-Peeler, 2016):

- use positive self-talk
- navigate physical barriers in ways that feel safe (e.g. using both hands and feet to balance on rocks)
- watch and imitate peers
- try challenging activities with a friend.

Other studies have also highlighted the role of peer support in helping less confident or less experienced children to engage in nature play. Children from a nature kindergarten in Norway described looking out for and helping friends during play (Alme & Reime, 2021). Another study undertaken in the United Kingdom (UK) did not specifically focus on very young children but did show that parents of primary-school-aged children reported that their child's participation in nature play increased when their child had a trusted friend present (Oliver et al., 2022).

Parent health and safety concerns

International research provides insights on parents' health and safety concerns that may affect their likelihood of engaging young children in nature play. However, as mentioned above, studies have not tested whether these concerns are linked with actual levels of engagement in nature play or whether they generalise to Australian families.

The following list summarises the kinds of health and safety concerns that parents and educators may have about engaging young children in nature play. These findings come from studies conducted in Canada, Portugal and the USA:

- accidents and injuries (Bento & Dias, 2017; Scheffel et al., 2021; Waddington & Pearson, 2021)
- exposure to allergens (Vandermaas-Peeler et al., 2019)
- exposure to diseases (Bento & Dias, 2017; Scheffel et al., 2021)
 - In contrast, a study of Danish parents found that some parents think that play in open spaces reduces the likelihood of spreading germs among children (Vandermaas-Peeler et al., 2019).
- exposure to poor weather conditions (Vandermaas-Peeler et al., 2019)
 - not having proper protective clothing or equipment (Scheffel et al., 2021)
 - sun exposure (Scheffel et al., 2021)
 - insect bites (Scheffel et al., 2021).

Because of the limited research relating to early childhood experiences, it is useful to draw on findings about primary-school-aged children. Parents and educators of primary-school-aged children in Australia and the UK have also raised concerns including:

- increased chance of injury (Oliver et al., 2022)
- low temperatures in winter and high temperatures in summer (Miller et al., 2022; Oliver et al., 2022)
- risk from snakes (Miller et al., 2022).

Parent perceptions of child capacity

One of the challenges for parents and educators is that outdoor and unstructured play is difficult to supervise (Oliver et al., 2022; Vandermaas-Peeler et al., 2019). Because of this, adult perceptions of children's independent play capabilities can affect how supportive they are of young children taking part in nature play. Adults may perceive that young children lack the physical and cognitive capacity to accurately assess risk and their own abilities (Nesbit et al., 2021; Oliver et al., 2022; Waddington & Pearson, 2021). These perceptions can result in adults restricting the activities children participate in, which may reduce a child's confidence to try new kinds of play (Nesbit et al., 2021; Waddington & Pearson, 2021).

Parental and educator attitudes about risk in play and child capacity to assess risk do not appear to change when their young children transition to primary school. In studies of parents and educators in Australia and the UK, primary-school-aged children were described as 'precious cargo' who could not take risks (Nesbit et al., 2021), and as 'clumsy' or 'accident prone' (Oliver et al., 2022). However, in one of these studies, some parents believed their children had a sense of responsibility and the maturity to manage risks and keep themselves safe during play (Oliver et al., 2022).

Parents in a family or school community can also influence one another in ways that affect the likelihood of children engaging in nature play. Research with parents and educators in Canada, Portugal and UK indicates that the important adults in a child's life are often socially influenced when it comes to nature and risky play. In particular, parents may change their behaviours based on how they think other adults will judge them, especially if their child becomes injured through nature play (Bento & Dias, 2017; Oliver et al., 2022; Scheffel et al., 2021; Waddington & Pearson, 2021).

Language use when supervising nature play

The language that parents and educators use can sometimes reflect the kinds of perceptions described above and may discourage children from engaging in nature play. Participants in a study of Canadian parents and educators of early preschool children felt that the term 'risky play' had negative connotations and could be perceived as children doing something wrong or dangerous. For this reason, using terms such as 'adventure play' may be preferable (Waddington & Pearson, 2021). The consistent use of cautionary language (e.g. 'slow down', 'be careful', 'not so high') can also unintentionally instil fear in children and deter risk taking (Oliver et al., 2022; Waddington & Pearson, 2021).

Adults sometimes use cautionary language differently with male and female children. For example, an Australian study of early childhood educators found that they more frequently assisted girls verbally and physically in a nature play context but challenged boys to do things independently. When this difference was highlighted in formal training, educators made a conscious effort to use the same language with both girls and boys, and consequently girls' participation in risky play increased (Higginbottom et al., 2023).

Balancing safety with exploration

Parents and educators may experience conflict between believing that nature and risky play are beneficial for children and at the same time feeling nervous or hesitant about the practice of nature play (McFarland & Laird, 2018; Nesbit et al., 2021; Obee et al., 2021; Waddington & Pearson, 2021). In one study, parents and educators in Norway said they believed risk to be a normal part of everyday life for children, and that injuries that occurred during risky play were 'normal injuries' (e.g. scrapes and bruises). However, they also described feeling nervous when supervising or encouraging children during risky play activities (Obee et al. 2021).

It can be hard for adults to know how much and what kinds of risks promote healthy development, and when they should intervene (Nesbit et al. 2021). Parents in another study spoke about not knowing how to balance keeping children safe with letting them explore and not 'hovering' or 'helicopter parenting' (McFarland & Laird, 2017).



Health and safety

- Discuss with parents the potential benefits of nature play.
- Give parents the opportunity to discuss concerns they have and acknowledge their concerns about safety and risk (Oliver et al., 2022):
 - Ask parents if there are things that might impact their child’s capacity to engage in nature play.
 - Remember that nature play can look different from family to family.
 - Encourage parents to choose physical or sensory activities that they feel are safe for their child’s unique needs.
- Encourage parents to consult with a GP or paediatrician if they have concerns about specific health risks (e.g. skin or respiratory problems) (Bento & Dias, 2017).
- Where appropriate, provide information that may help alleviate concerns or identify nature play activities that parent and child are both comfortable with. Resources in the [Further reading section](#) of this practice guide may be useful.
- Discuss parent concerns about weather exposure and how they can prepare themselves and their children for nature play together at home or in a park, as well as for when their children are at school. This might include wearing appropriate clothing depending on the conditions and packing items for weather protection:
 - Parents can check the weather and plan together with their child beforehand, involving the child in decisions about what protective clothing or gear they might need (Scheffel et al., 2021).

Facilitating child autonomy

Practitioners and parents can workshop ways to support child autonomy while keeping children safe:

- Be conscious of how the language adults use influences child autonomy and behaviours. Consider how frequently and for what purpose parents:
 - tell their children what to do or where to go within a play space. Could parents pause a little longer than usual and give children space and time to use their creativity and imagination to lead their own play before offering suggestions (Aslanian et al., 2020; McFarland & Laird, 2018)?
 - use ‘cautionary’ language such as ‘be careful’, ‘not too high’, ‘don’t do that’.
- Consider if it might be appropriate for the child to think about and verbalise what they will do next or to tackle challenges with their peers, brainstorming the challenges together.
- Be aware of possible gender bias and offer verbal and/or physical assistance according to individual need, regardless of gender (Higginbottom et al., 2023).
- Discuss ways parents can encourage children to make decisions and navigate challenges by limiting the verbal and physical assistance offered until the parent or child feel assistance is needed.
- Reassure children that it is okay to try and fail with new or tricky activities (Alme & Reime, 2021; Obee et al., 2021).
- Involve children in assessing the risks and benefits of various play activities. This can increase their confidence and awareness of personal limitations during nature play (Sandseter & Sando, 2016).
- Encourage children to be curious about nature and to ask questions (e.g. about flowers, plants, insects). This can help teach respect and mindfulness in the outdoors and can help children learn boundaries and risks when interacting with nature.

Conclusion

Nature play is a specific type of play that is freely chosen, child-led and includes interaction with natural elements such as trees, rocks, plants, dirt and water. Research has demonstrated a range of developmental benefits to nature play for young children. Knowledge about factors that influence levels of engagement with nature play during children's early years can assist practitioners to support parents in: (a) identifying or creating opportunities for children to engage in nature play; (b) understanding and assessing risks in nature play; and (c) safely supporting children in nature play activities.

Research suggests 3 factors may affect the likelihood that young children will engage in nature play – access to green spaces, child-related characteristics, and parent health and safety concerns. Parent perceptions of children's ability to accurately assess risk and their own limitations can affect the likelihood of a child engaging in nature play.

Practitioners can support parents by: (a) discussing or providing information about the benefits of nature play and listening to parent concerns around safety or risk; and (b) workshopping strategies with parents to keep children safe while encouraging autonomy. Practitioners can also workshop ideas for nature play opportunities with parents, remembering that: most outdoor areas can be suitable for some forms of nature play; there are many simple and cost-effective ways to 'green' outdoor spaces and provide natural materials for play; and nature play activities can be simple and should be led by the child's imagination.

Further reading and resources

Resources about nature play

- [Nature kindergartens: A space for children's participation](#)

This research article explores how children and staff experience children's participation through play and everyday life in kindergartens that organise most of the child's day outside.

- [Everyone can play: Nature play – a how-to guide](#)

This guide, from the NSW Government, provides useful tips for creating nature play spaces and incorporating nature play into existing play spaces.

- [Nature play ideas](#)

The Nature Play QLD website provides a range of resources on nature play activities, including: idea sheets for playing with loose items (e.g. sticks, dirt, leaves, pebbles); to-do lists for a range of activities (e.g. backyard play, nature's music, at-home camp outs); and things-to-do lists for young children of various ages.

- [Developing a relationship with the environment: For the health of it](#)

This article draws on a Canadian kindergarten case study to highlight the benefits of children developing relationships with nature. It includes strategies for overcoming barriers to nature play including concerns for weather and other risks.

- [Get up and grow: Getting out and about – outdoor active play](#)

This Australian Government resource provides tips for encouraging children, including toddlers and preschoolers, to participate in outdoor active play.

- [Natural environments in early childhood services](#)

The Victorian Government website provides information about nature play for children, including young children. It provides ideas for nature play at home, as well as tips for educators.

- [Bush kinder](#)

This Victorian Government webpage describes what bush kinder is and outlines key information about the Bush Kinder Grants Program.

Resources about children and play

- [Parent-child play: A mental health promotion strategy for all children](#)

This AIFS webinar explores how practitioners who work with families with children aged 0-12 years can adapt child-led play to their specific professional circumstances and use it as a mental health promotion strategy.

- [Supported playgroups for parents and children](#)

This AIFS article focuses on the available evidence for the effectiveness of supported playgroups in promoting positive outcomes for children and families and identifies factors important to their operation.

- [Principles for high quality playgroups: Examples from research and practice](#)

This AIFS practice guide provides information on a set of principles that capture the essential core components of a high-quality playgroup.

How this resource was developed

This practice guide is part of a broader evidence package on nature play in early childhood for AIFS Child Family Community (CFCA) information exchange. The studies reviewed were identified through a rapid review and synthesis of international empirical literature. Our CFCA audience has identified social and emotional wellbeing in early childhood as a topic they would like more evidence about to inform practice.

Acknowledgements

Dr Jasmine B. MacDonald, Kylie Butler and Dr Kristel Alla work in the Child Family Community Australia (CFCA) team at the Australian Institute of Family Studies. Dr Mandy Truong, CFCA, contributed to the conceptualisation of the broader evidence package focusing on nature play for children in their early years, including screening and data extraction during the rapid review process.

References

- Agostini, F., Minelli, M., & Mandolesi, R. (2018). Outdoor education in Italian kindergartens: How teachers perceive child developmental trajectories. *Frontiers in Psychology, 9*. doi.org/10.3389/fpsyg.2018.01911
- Alme, H., & Reime, M. A. (2021). Nature kindergartens: A space for children's participation. *Journal of Outdoor and Environmental Education, 24*(2), 113–131. doi.org/10.1007/s42322-021-00081-y
- Aslanian, T. K., Andresen, A. K., & Baasland, T. (2020). Climbing, hiding and having fun: Schoolchildren's memories of holistic learning in a Norwegian kindergarten. *Nordic Studies in Education, 40*(3), 268–285. doi.org/10.23865/NSE.V40.2447
- Beery, T. (2020). Exploring access to nature play in urban parks: Resilience, sustainability, and early childhood. *Sustainability, 12*(12). Retrieved from mdpi-res.com/d_attachment/sustainability/sustainability-12-04894/article_deploy/sustainability-12-04894-v2.pdf?version=1592729790
- Beery, T., & Jørgensen, K. A. (2018). Children in nature: Sensory engagement and the experience of biodiversity. *Environmental Education Research, 24*(1), 13–25. doi: 10.1080/13504622.2016.1250149
- Bento, G., & Dias, G. (2017). The importance of outdoor play for young children's healthy development. *Porto Biomedical Journal, 2*(5), 157–160. doi.org/10.1016/j.pbj.2017.03.003
- Brussoni, M., Gibbons, R., Gray, C., Ishikawa, T., Sandseter, E. B., Bienenstock, A. et al. (2015). What is the relationship between risky outdoor play and health in children? A systematic review. *International Journal of Environmental Research and Public Health, 12*(6), 6423–6454.
- Brussoni, M., Ishikawa, T., Brunelle, S., & Herrington, S. (2017). Landscapes for play: Effects of an intervention to promote nature-based risky play in early childhood centres. *Journal of Environmental Psychology, 54*, 139–150. doi.org/10.1016/j.jenvp.2017.11.001
- Coates, J. K., & Pimlott-Wilson, H. (2019). Learning while playing: Children's Forest School experiences in the UK. *British Educational Research Journal, 45*(1), 21–40. doi.org/10.1002/berj.3491
- Collado, S., & Corraliza, J. A. (2015). Children's restorative experiences and self-reported environmental behaviors. *Environment and Behavior, 47*(1), 38–56. doi.org/10.1177/0013916513492417
- Dankiw, K. A., Tsiros, M. D., Baldock, K. L., & Kumar, S. (2020). The impacts of unstructured nature play on health in early childhood development: A systematic review. *PLOS ONE, 15*(2), e0229006. doi.org/10.1371/journal.pone.0229006
- Department of Education. (2022). *Belonging, being, and becoming: The early years learning framework for Australia (V2.0)*. Canberra: Department of Education.
- Ernst, J., Johnson, M., & Burcak, F. (2019). The nature and nurture of resilience: Exploring the impact of nature preschools on young children's protective factors. *International Journal of Early Childhood Environmental Education, 6*(2), 7–18. eric.ed.gov/?id=EJ1225648
- Higginbottom, K., Newman, L., West-Sooby, K., & Wood, A. (2023). Intentional teaching for risky play: Practitioner researchers move beyond their comfort zones. *Australasian Journal of Early Childhood, 48*(1), 18–33. doi.org/10.1177/18369391221112740
- Howe, N., Perlman, M., Bergeron, C., & Burns, S. (2021). Scotland embarks on a national outdoor play initiative: Educator perspectives. *Early Education and Development, 32*(7), 1067–1081. doi.org/10.1080/10409289.2020.1822079
- Lucas, A. J., & Dymont, J. E. (2010). Where do children choose to play on the school ground? The influence of green design. *Education 3–13, 38*(2), 177–189. doi.org/10.1080/03004270903130812
- McClain, C., & Vandermaas-Peeler, M. (2016). Social contexts of development in natural outdoor environments: Children's motor activities, personal challenges and peer interactions at the river and the creek. *Journal of Adventure Education and Outdoor Learning, 16*(1), 31–48. doi.org/10.1080/14729679.2015.1050682
- McFarland, L., & Laird, S. G. (2018). Parents' and early childhood educators' attitudes and practices in relation to children's outdoor risky play. *Early Childhood Education Journal, 46*(2), 159–168. doi.org/10.1007/s10643-017-0856-8
- Miller, N. C., Kumar, S., Pearce, K. L., & Baldock, K. L. (2022). Primary school educators' perspectives and experiences of nature-based play and learning and its benefits, barriers and enablers: A qualitative

descriptive study. *International Journal of Environmental Research and Public Health*, 19(6), 3179. doi.org/10.3390/ijerph19063179

Nesbit, R. J., Bagnall, C. L., Harvey, K., & Dodd, H. F. (2021). Perceived barriers and facilitators of adventurous play in schools: A qualitative systematic review. *Children*, 8(8). doi.org/10.3390/children8080681

Obee, P., Sandseter, E. B. H., & Harper, N. J. (2021). Children's use of environmental features affording risky play in early childhood education and care. *Early Child Development and Care*, 191(16), 2607–2625. doi.org/10.1080/03004430.2020.1726904

Oliver, B. E., Nesbit, R. J., McCloy, R., Harvey, K., & Dodd, H. F. (2022). Parent perceived barriers and facilitators of children's adventurous play in Britain: A framework analysis. *BMC Public Health*, 22(1), 636. doi.org/10.1186/s12889-022-13019-w

Puhakka, R., Rantala, O., Roslund, M. I., Rajaniemi, J., Laitinen, O. H. et al. (2019). Greening of daycare yards with biodiverse materials affords well-being, play and environmental relationships. *International Journal of Environmental Research and Public Health*, 16(16). doi.org/10.3390/ijerph16162948

Sandseter, E. B. H., & Sando, O. J. (2016). 'We don't allow children to climb trees': How a focus on safety affects Norwegian children's play in early-childhood education and care settings. *American Journal of Play*, 8(2), 178.

Scheffel, T.-L., Hives, L., Scott, J., & Steele, A. (2021). Learning with wide-open eyes: Nudging at perceived barriers to outdoor learning within a kindergarten. *Children, Youth and Environments*, 31(2), 83–104.

Tranter, P. J., & Malone, K. (2004). Geographies of environmental learning: An exploration of children's use of school grounds. *Children's Geographies*, 2(1), 131–155. doi.org/10.1080/1473328032000168813

Vandermaas-Peeler, M., Dean, C., Biehl, M. S., & Mellman, A. (2019). Parents' beliefs about young children's play and nature experiences in Danish and US contexts. *Journal of Adventure Education and Outdoor Learning*, 19(1), 43–55. doi.org/10.1080/14729679.2018.1507829

Waddington, K. C., & Pearson, E. S. (2021). Parental perspectives on the barriers and facilitators to risky-play in preschool children. *Journal of Multidisciplinary Research at Trent*, 3(1), 104–123.

Woolley, H., & Lowe, A. (2013). Exploring the relationship between design approach and play value of outdoor play spaces. *Landscape Research*, 38(1), 53–74. doi.org/10.1080/01426397.2011.640432

Zamani, Z. (2016). 'The woods is a more free space for children to be creative; their imagination kind of sparks out there': Exploring young children's cognitive play opportunities in natural, manufactured and mixed outdoor preschool zones. *Journal of Adventure Education and Outdoor Learning*, 16(2), 172–189. doi.org/10.1080/14729679.2015.1122538

Suggested citation

MacDonald, J.B., Bulter, K., & Alla, K. (2023). *Engaging young children (0-5 years) in nature play* (Practice Guide). Melbourne: Child Family Community Australia, Australian Institute of Family Studies.



The Australian Institute of Family Studies acknowledges the traditional Country throughout Australia on which we gather, live, work and stand. We acknowledge all traditional custodians, their Elders past, present and future, and we pay our respects to their continuing connection to their culture, community, land, sea and rivers.

This publication was produced by AIFS' Child Family Community Australia information exchange (CFCA). The work of CFCA is made possible by the generous funding of the Department of Social Services. Questions or comments? Please contact CFCA at cfca-exchange@aifs.gov.au

© Commonwealth of Australia 2023. With the exception of AIFS branding, the Commonwealth Coat of Arms, content provided by third parties, and any material protected by a trademark, all textual material presented in this publication is provided under a Creative Commons Attribution 4.0 International licence (CC BY 4.0). You may copy, distribute and build upon this work for commercial and non-commercial purposes; however, you must attribute the Commonwealth of Australia as the copyright holder of the work. Content that is copyrighted by a third party is subject to the licensing arrangements of the original owner.



Visit the Australian Institute of Families Studies (AIFS) website at aifs.gov.au to explore our resources, publications and events.

Cover image: © gettyimages/RyanJLane

2310_CFCA_PG_Engaging young children in nature play