



# Hear Water

Nature connection games and activities for schools



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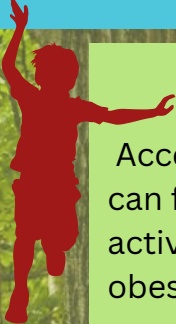
# Introduction

Over the last few decades the term 'nature connection' has gained momentum, with a significant body of research, identifying this as a vital component to our physical and mental wellbeing. Richard Louv's book, *Last Child in the Woods*,<sup>(1)</sup> made a compelling case for addressing what he termed 'nature deficit disorder' with children increasingly experiencing an indoors childhood and missing out on the freedom, adventure and healthy developmental opportunities offered by time in nature.

In the UK between 2022-23, 36% of year 6 children were considered to be overweight or obese (2) and children's mental health is in crisis with a 50% increase in referrals to emergency mental healthcare in the last three years, and 1.4 million referrals to Child and Adolescent Mental Health Services (CAMHS) in 2022 alone.<sup>(3)</sup> So how can outdoor play and learning help?

## Benefits of outdoor play and learning


### Physical



Access to parks and greenspace can foster increased physical activity and lead to reduced risk of obesity (4,5,6)


Outdoor play increases the likelihood that girls will remain active into adolescence (7)

### Social



Learning in nature can support improved relationship skills (8, 16) leading to better social skills, (11, 12) and stronger emotional connections to people and nature. (21,22,23,24)


### Mental



Learning in nature can help reduce stress, (8) anger (9, 10) and aggression (9, 10) and lead to:


- Increased self-esteem (11,12)
- More impulse control (13)
- Less disruptive behaviour (14)

### Creative



Learning in nature can enhance creativity, critical thinking and problem solving. (25)


### Cognitive



Learning in nature can boost performance in reading, writing, maths and science. (15,16,17,18,19)

Spending time in nature can help children with increased focus and attention (11,12,13,14) and lead to more enthusiasm for learning. (15,20)

### Care for nature



Time outdoors in nature contributes to children's care for nature while supporting their healthy development (11,26,12)

# The 5 pathways to nature connection

Spending time in nature has been shown to be beneficial for our mental and physical health. There is however a difference between the impact created through nature-based recreation or using nature as a resource, and cultivating a state where individuals feel truly connected and a part of the natural world. This deeper relationship can be described as 'nature connectedness', and has been shown to lead to increased pro-environmental behaviours and wellbeing. A team from Derby University set out to explore the conditions that can increase nature connectedness, and developed the following 5 pathways.

Contact - using the senses to explore nature



Meaning - exploring the meaning that nature holds for us



Beauty - stopping to appreciate the beauty of nature



Compassion - taking care of the natural world



Emotion - exploring our emotional connection to nature

The following exercises explore the 'contact' pathway focusing on some games and activities that can help children to listen more to the natural world. There are also some basic steps to help groups arrive in green spaces, and a few suggestions of activities for the other senses.



# Tune in Meeting nature

**It's great to start sessions with a 'grounding' - this is an exercise that helps us to arrive in a different space and awaken our senses. You can tailor this to your group, using language and images suitable for their ages and language levels, but here is a suggested starting point.**

- Sitting or standing in a circle, invite the children to close their eyes, or soften their gaze.
- Ask them to take a couple of deep breaths and to imagine letting go of anything they have carried with them from the day so far (the rush to get to school...a squabble with a sibling...) let it all go with a big sigh, shake it all off.
- Ask the children to notice their feet on the ground - they might want to rock back and forth a little, noticing the earth holding them, perhaps they can imagine what's underneath their feet - the roots of the grass and trees, the minibeasts and moles under the ground...busy 'being'...
- Ask them if they can feel the wind or sun on their skin - the places where they meet the natural world - is the sun warm on their face? is the breeze cool on their skin?
- Now focus in on what they can hear - what are the closest sounds, and the furthest sounds that they can hear? Which are human sounds and which are non-human?
- Move to smell - what are the scents in this place today? Flowers, sun-baked earth or freshly cut grass?
- Can they taste anything? The last flavours from breakfast? Rain in the air? Pollen on the wind?
- Invite them to take a couple of nice deep breaths, then to wriggle their fingers and toes to come back into their body.
- Gently opening their eyes, ask them to notice something in nature that their eyes are drawn to.
- Go round the circle and ask each child to share this with the group, perhaps encouraging them to describe what they noticed rather than giving a one word answer e.g. "I noticed a yellow leaf" "I noticed dew drops on the grass"



**Some children can find it hard to be still and focus to this degree, (although it can be worth persevering for a few sessions!). With a younger group, you might just ask them to close their eyes and hold up a finger every time they hear a new sound, then go around and ask them what they heard. Or you might ask a group to share something they have noticed in nature today or on the walk from class. Alternatively, some of the games and activities I have included can achieve the same objective - getting children to come into their bodies and tune in using their senses.**



# A moment alone

Another lovely exercise is a sit spot. Ideally this is a special place that you return to regularly, noticing the changes throughout the day or seasons and developing a connection to the unique ecosystem of plants and animals that frequent or inhabit the space. Children who have free time to play in nature will often find a sit spot naturally - you may have memories of a tree that you loved to climb as a child, or a den or hidey-hole that was your own secret place in the world. Whilst its hard to create this sense of time and space in the school day, children can really benefit from a moment alone.



- Invite each child to find a spot that they feel drawn to (but within a boundary that you set!) - they don't have to be very far from others, but ideally with enough space that they can't talk or distract each other too easily.
- Send them off to their sit spot for a short time initially - you can extend this as they become more familiar with the idea. Tell them to come back when you give the call (agree a call that carries well such a wolf howl or coooeeey!!!)
- You might like to just observe what they chose to do in their space - I've watched youngsters digging in the dirt, perching on a branch or becoming absorbed by mini-beasts in the grass. Be curious about what catches their attention - this might frame a future session!
- Alternatively you can set them a task to do in their sit spot to help them settle - Make a sound map (see page 8), spot 5 different textures or colours, see if there are any signs of animal activity (a feather, a beetle, a spider web etc) or ask them to write down something they notice on a slip of paper (these can be assembled to make a class poem later on)
- Try to make a little time for their sit spot in each session - perhaps setting a different activity there each time

If there isn't the space to send a group off to their own spot, you can still encourage a moment of solitude by getting children into a large circle facing outwards, so each child has a different view, and spaced out with generous gaps between children - or you might spread a group along a line, perhaps at the top of a school playing field or along a river bank (with staff at either end) or along a path or even lying on the ground on a dry day - take a few moment of silence here before gathering the group in to see what they noticed in their moment of solitude.





# listen up!

## Developing listening skills

There is so much to hear in nature if we stop to listen! The territorial trill of a robin, the drone of a bee on a sunny day, wind sloughing through grass or rain pattering on the leaves. Sound helps us to orientate ourselves in the natural world, giving us information about our surroundings - the flora and fauna, the weather conditions and the season. Tuning in to our sense of hearing can therefore help us to become more present in the moment and in the space. Birdsong has also been shown to have a positive impact on mental health, even boosting the moods of people with depression <sup>(27)</sup> and children often tell me that birdsong is one of the things they love most in nature.



### Silent movement

Imagine what other animals hear? Ask children to stick their fingers in their ears and stomp round as they usually would on a walk- then ask them what they heard - probably a lot of thudding! This is what animals in the ground will be hearing as we approach, so if we want to see wildlife, we need to practise the art of silent movement. Ask everyone to raise one leg as though they had a piece of string attached to their knee. Lower their foot and allow the toes to touch the ground gently - then roll through the ball, the side and finally the heel of their foot - see how quietly they can all do this then try

walking like this around the space, placing each foot mindfully and moving really slowly - like a cat stalking a mouse. Get the group to repeat the 'fingers in ears' experiment seeing if they can walk silently enough to avoid detection! (This is a great way to bring children into their bodies, and alert them to subtle sounds around them - and also a great set-up for the following games). Practise moving through the woods or around the edge of the school field creating as little disturbance as possible, and see if you notice a difference in levels of birdsong before and after you dropped down to nature's pace.



**Another master of silent movement is the owl. Their feathers are specially shaped to allow them to glide silently through the air and pounce on their prey. Barn owls also have a disk shaped face that captures and focuses sound into their ears giving them amazing hearing. Other animals such as deer have large ears to catch sound. They can swivel their ears to pick up sound from different directions. We can try this by cupping our hands behind our ears - try listening like this, then try cupping your hands with the palms facing backwards - can you hear what's happening behind you? This technique is helpful in the following games.**





# Listening games

Bringing in an element of competition and playfulness is a great way to develop children's listening skills. The following games can also help a group to 'change state' if they are off task and chatty, requiring both listening and coordination. Silent movement especially requires real focus and physical awareness. Being hunted brings an edge of adrenaline too - and can help to develop empathy with the animals around us that are hunted all the time!



## Fox the fox

This game is also known as 'steal the spines off the hedgehog' and 'keeper of the keys'. The basic principle is that one child is blindfolded and sits on the ground with a pile of sticks (or whatever you have to hand) in front of them. These represent the fox's 'food'. The other children are scattered through the space. They have to sneak in and steal a stick without the fox hearing them. If the fox detects them approaching, they must point clearly in the direction of the sound.

The referee decides whether it's a 'hit', a 'miss' or 'background noise' if they were distracted by a sound other than the 'creeper'. The referee can dictate the pace by choosing how many 'creepers' can move at once, pointing at them to set them in motion (I normally let children know I will choose those waiting most quietly). They must not only get the stick, but also creep back to their original spot without being heard. The winner is the child with the most sticks at the end. If a child is uncomfortable being blindfolded, they can just close their eyes or pull a hoodie down over their face, (but it's better if they do wear a blindfold!) If the ground is not too prickly, this game is great fun to do barefoot, adding a sensory element and helping the creepers to move even more quietly. Make sure there are some challenges involved - a woodland floor with dead leaves and sticks to creep over presents much more of a challenge than a grassy playing field!

## Blindfold drum stalk

Another brilliant game for children and adults is the blindfold drum stalk. In this game the players are all blindfolded. Someone hides in the woods and periodically bangs a drum (alternatively you could use a chime bell or whistle, or even clap). The players have to move towards the sound. This requires them to move very slowly and carefully (especially if they have to navigate some obstacles such as trees). With younger children you might have some of the group as 'buddies' to make sure no one wanders into a bramble patch or falls over. Once they find the drummer, they sit down and take off their blindfold and can watch the rest of the players' antics!

Another variation of this game is to get the blindfolded children in a line with hands on each other's shoulders. Lead them through the space with clicks, whistles or a drum beat - they all have to move as one millipede towards the sound without losing their head or tail!



## Bat and moth

How do bats hunt? It's a popular myth that bats are blind - in fact their eye sight is excellent, they do however hunt at night and so largely rely on echolocation to find their prey. In this game, children will mimic bats using echolocation to hunt for some tasty moths. Choose your 'bat' and blindfold them. The other children form a circle around the bat, except for one or two who will play the 'moths'. They also enter the circle. Spin the bat around a couple of times then call 'game on'. The bat tries to locate the moths by calling "bat" the moths answer "moth". They must answer the bat every time it calls! The bat homes in on the



moths while they dodge and duck in an attempt to avoid the clutches of the bat. If the bat grabs or tags a moth, that moth is out and joins the circle. If the bat grabs someone in the outer circle they can say "tree" to let the bat know that they aren't edible! (at least not to a bat!) The bat wins the game when they have caught both moths. Its good to get the children to practice the call and response element as it can take younger children a while to get the hang of this (and some moths will try whispering!). It's also important to encourage the 'trees' to stay quiet so that the bat has a good chance of catching a moth. If the bat is really struggling, you can shrink the circle as the game goes on, closing the net on the moths.

## Cat and mouse

Divide the children into two groups - cats and mice. The 'cats' sit along a path wearing blindfolds. The 'mice' have to sneak past them (using their silent moving techniques!) without being caught (pointed at). If they are caught, they are out. The winner is any mouse that can creep the whole course without being heard! You can adapt this game to any predator/prey animals the children are learning about - thinking about how it is to be a small animal trying to find food without being caught and eaten!

## Spider's web

This game is a bit like 3D twister - create a spider web with string, weaving it between trees. You want some strands that have to be stepped over and others that have to be ducked under - although to a large extent your course will be dictated by the trees available. Tie a few jingle bells at various points in the web. One child gets to be the spider and sits behind the web. The other children have to try to make their way through the web without alerting the spider by jingling a bell! Any child that manages to cross the web without being caught is a winner!



## Find your family

I have used this game with small children to learn about farm animals, and older children to teach about birdsong. Print out pictures of your chosen animals with their calls. With birds you might have great tits whose calls sound like 'teacher teacher', blue tits 'see, see see tehehehehe,' chiffchaffs 'chiff-chaff chiff-chaff', buzzards 'keee, keee', tawny owls 'toowhit towhooo' etc. Think about birds they are likely to hear on the school grounds or where they live so they start to notice birdsong more. You need at least two cards for each animal. Hand them out without the children seeing each other's cards - then all start making their 'call', milling as a group to find their flock or family. This is a useful game for sorting children into teams for other games.





# Listening activities

## Drawing sound

What do different sounds look like? There's no 'right' or 'wrong' answer so this activity allows children to be playful, making marks and exploring colour. This activity can be done in 'sit spots' or spread out in one area (but obviously with no talking!) Let the children express the different sounds that they hear in any way they like - it can be good to model some ideas, perhaps asking for three different ideas for drawing bird song for instance. Is it a pink scribble? blue loopy lines or symbols such as musical notes? Once the children get the idea that they can express what they hear in any way they like, give them a time limit and then gather in a circle with the pictures in the middle and see which sounds everyone heard, and how they depicted these. I use oil pastels and coloured pens or pencils to offer a range of mark making possibilities.



## Sound maps

This activity can be developed into sound maps. Children start by drawing a symbol to represent the spot they are sitting in (for instance by a tree). They then create a map of marks to represent the different things they hear and the direction in which they hear them. With older groups this can be fun to do over a wider area so that you can see the full soundscape emerging, with children in different spots hearing different sounds - or perhaps sounds that might have moved across the landscape during the activity, such as a buzzard cry appearing in different directions on each map. It can also be interesting to do this activity at different times of day or in different seasons to record changes in bird song, insect sounds or maybe you even have some noisy frogs in a school pond!



## Soundscapes

These activities can lead nicely into creating a soundscape together. Get the group in a circle and ask who would like to start by copying one of the sounds that they heard (perhaps choosing something from their drawing) This child starts and keeps repeating their sound while you go around the circle bringing in each child until you have a full soundscape - You can conduct this to bring the volume up and down, or you might bring part of the group or some individuals in and out (agree your own 'conductor' signs with the group) - You might let one or two children have a go at being conductors too. In the Hear Water project, we invited children to impersonate some of the water sounds they heard, starting with quiet sounds from the hydrophones and building up to louder rushing water, so feel free to focus on a particular type of nature sound too.

You could also bring in percussion instruments, or even make your own with junk (containers full of sand or rice make nice shakers, I've also made rainsticks with cardboard tubes or impersonated the stridulation of invertebrates with a pinecone and stick)



# Activities for the other senses

## Touch

### Meet a tree

In this game, children explore a tree using mostly touch. They can work in pairs or threes. One child in each group is blindfolded, spun around a couple of times, and then led to a tree by their partner/s. They have a few minutes at the tree to explore, mostly using touch, though I have also seen children sniff a tree! (do not let them lick the trees however as some such as yew are poisonous!) After a few minutes with their tree, the blindfolded children are led back to their starting places and their blindfolds are removed. They then have to find the tree that they were led to before swapping over with their partners.

### Making ink or paint from natural materials

All sorts of things can be used to make ink or paint - berries, leaves, petals, chalk, clay, charcoal. There are some more sophisticated recipes out there including acorn ink - but you can have a lot of fun simply, grinding, crushing and mashing materials to create different colours. Egg white or water can be added to dry materials. Make sure you know if there are any toxic plants to avoid on your site (lords and ladies, spindle berries and deadly nightshade are all toxic) and mushrooms are best avoided unless you are an expert. Another easy way to get colour from leaves and petals is to arrange them on a piece of white fabric, sandwich it between some scrap paper, and bash the plant matter with a rolling pin or mallet. The pigment will stain the fabric leaving impressions of the plants. You then simply pick or bush off the crushed leaves leaving beautiful patterns.



### Blindfold rope trail

Another great blindfolded activity is a rope trail. Set this up in advance, tying rope (I use old climbing rope) between trees. It needs to be a reasonable length and tied securely enough to withstand children pulling and tugging at it. I also like to involve some gentle obstacles such as a slope or something to step over. Try to avoid the group seeing the whole trail beforehand. Invite the children to put on their blindfolds (or close their eyes if they don't like wearing blindfolds) and guide them one at a time over to the start of the trail. Let each child move a little way along the trail, using one hand on the rope to guide them, before letting the next child follow on behind. Have another member of staff (or a child) at the other end of the trail to tell the explorers when they have reached the end. This can be done with guide buddies walking alongside if your group are very young or if some children are nervous about the trail. If your route is not too prickly this is great done barefoot. At the end, ask how the children found the experience - were they surprised when they removed their blindfolds? Removing sight can make everything seem much bigger and more dramatic than it normally does!



# Smell

## Scent walk

Imagine what the world is like for a dog, everywhere full of smells, all telling a story! Take the children on a scent-adventure. I have made little felt pockets with children, but you could use old socks for a 'smelly sock walk, or paper cups or envelopes. As you walk, gather scented plant material such as rose petals, lavender, lilac or rosemary. Obviously this works really well if you have a school garden, but a park or the verges of a school field can be surprisingly fruitful! Make sure not to over harvest - only take that which is abundant, and for this exercise you only need one or two petals or a few leaves from each plant to get a lovely scent. At the end of your walk, compare the different fragrances created to tell the story of your walk.



## Eye pillows

You can make very simple eye pillows using old garments - sleeves or the legs of old pyjamas work well, (you could also use old socks or sections from woolly tights and tie the ends of you don't want to do sewing). Cut a tubular section from your garment and sew up one side. Fill with flaxseeds or rice and dried, scented plant material such as rose petals and lavender. Sew the other side to complete. These can be cooled in a freezer or warmed in a microwave, and with the scent of rose or lavender can be really comforting if a child has a bump or needs a little hug from nature.

# Taste

## Herbal teas

If you are lucky enough to have a herb garden at school, this is an easy activity however there are also lots of wild plants that you can use to make tea. If you are not confident on plant ID, buy loose dried teas for the tasting, then try to find the plants together! Teas you can make with common plants include chamomile, nettle, rosehip, lemon balm, mint and pine needle. You can also find dandelion coffee in health food shops (it's caffeine free!) Let the children taste the teas and try to guess what's in them - you could gather some of the actual plants for them to look at, or you could use pictures initially, then try to find the plants in the wild.



## Wild food

If you have access to a campfire, there are lots of variations on fritters that you can make - wild garlic, nettle, elderflower and greater plantain are all great dipped in batter mix and fried! However you don't have to cook to explore taste. You can make (or buy) wild garlic and nettle pesto in spring. You could also do a great session around tasty trees, using a mix of harvested and shop bought products. Tree tastes include elderflower cordial, maple syrup, acorn coffee and xylitol (made from birch sap) - and of course there are plenty of fruits that come from trees - cherries, apples, pears, plums, quince and elderberries (don't eat too many elderberries as they can cause mild stomach upsets if eaten in excess). There are also lots of nuts that grow wild - hazelnuts and sweet chestnuts are common, and acorns can be used to make a nutritious flour (although must be leached first). Many schools have a nut-free policy so fruit is generally a safer bet for tasting, but it's worth talking about the importance of nuts for wildlife.



# Sight



We live in a world full of beauty that we often don't even notice! There are many tiny things that we miss as we rush about and exploring with viewing lenses or magnifying glasses can reveal a whole world of awe and wonder! Lichen is fascinating to look at through a lens, as are tree galls in all their weird sculptural beauty. Common flowers such as the daisy reveal complex

patterns and mini beasts and freshwater invertebrates can be seen from a different perspective, as ferocious subterranean predators or powerful iridescent aviators. Even without lenses, getting children to lie on the earth and watch mini beasts moving through the grass or around a log pile can be a fascinating exercise in discovering the busy world beneath their feet.

## Scavenger hunts

Scavenger hunts are a great way to get a group exploring a space. I like to make these seasonal, drawing attention to what's happening at each time of year. You might include different flowers or the leaves or cones of trees as well as animal signs such as spider webs, tracks, holes in the ground, food remains (nibbled nuts are common) or feathers. It's also a lovely exercise for you to get out before your session and notice what's happening on the land. See what catches your eye and celebrate it!



## Colour matching

A nice activity for younger children is to cut out some butterfly shapes, apply strips of double sided tape, and let them decorate the wings with petals and leaves to explore symmetry. On a summer's day, you might manage to catch some butterflies to look at (as long as the children are gentle!) Older children can create 'paint palettes' or rainbows using the same principle.



## Land art

Explore the work of land artists such as Andy Goldsworthy, Chris Drury or Richard Long. You can make beautiful mandalas as a big group, all gathering materials of a particular colour or form and arranging in concentric rings. Or you might create patterns with sticks and stones or make hangings from trees with autumn leaves, feathers or berries. Show the group some pictures for inspiration then see what they come up with.



## Eye spy trail

This activity leads on nicely from the blindfold rope trail - but could also be a stand alone activity. Simply hide objects along your rope trail, or along a set route such as a path. Use a mixture of man made objects and natural objects - feathers, shells, bones, animal skulls, toys, sunglasses, a glove etc. After they have done the trail blindfolded, they can walk it again with their eyesight returned! See how many objects each child spots and is able to recall. Let them repeat the trail a few times to see if they spot anything new - then finally repeat the trail together, pointing out anything they might have missed. Discuss which objects stand out and which blend in to their surroundings. This leads in nicely to conversations about camouflage and about why some plants and animals might like to stand out, such as a bird or butterfly attracting a mate, or a plant attracting a pollinator.

# References

1. Louve, Richard - *Last Child in the Woods; Saving our children from Nature Deficit Disorder*. Chapel hill: Algonquin books, 2008
2. Office for Health Improvement and Disparities. *Patterns and trends in child obesity in England*, <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england>
3. Gregory, A (2004) 'Children's Emergency Mental Health Referrals Soar by 53%.' *The Guardian*. <https://www.theguardian.com/society/2024/feb/07/childrens-emergency-mental-health-referrals-in-england-soar-by-53>
4. Hartig T et al, (2014). 'Nature and Health.' *Annual Review of Public Health*, 35, 207-28.
5. Christian H et al. (2015). 'The influence of the neighborhood physical environment on early child health and development: A review and call for research.' *Health Place*, 33, 25-36.
6. Wolch J et al. (2011). 'Childhood obesity and proximity to urban parks and recreational resources: A longitudinal cohort study.' *Health Place*, , 17(1), 207-214.
7. Pagels P et al. (2014). 'A repeated measurement study investigating the impact of school outdoor environment upon physical activity across ages and seasons in Swedish second, fifth and eighth graders' *BMC Public Health*, 14(1), 803
8. Chawla L et al. (2014). 'Green schoolyards as havens from stress and resources for resilience in childhood and adolescence.' *Health Place*, 28, 1-13.
9. Roe J & Aspinall P (2011). 'The restorative outcomes of forest school and conventional school in young people with good and poor behavior.' *Urban Forestry for Urban Greening*, 10, 205-212.
10. Younan D et al. (2016). 'Environmental determinants of aggression in adolescents: Role of neighborhood green space,' *Journal of the American Academy of Child Adolescent Psychiatry*, 55(7), 591-601.
11. Richardson, M. Sheffield, D. Harvey, C. & Petronzi (2016). (RSPB): 'The Impact of Children's Connection to Nature.' Derby: College of Life and Natural Sciences, University of Derby
12. Pritchard, A., Richardson, M., Sheffield, D., & McEwan, K. (2019). 'The relationship between nature connectedness and eudaimonic well-being: A meta-analysis.' *Journal of Happiness Studies*, 1-23. *Journal of Happiness Studies* (2020) 21:1145–1167 <https://doi.org/10.1007/s10902-019-00118-6>
13. Faber Taylor, A et al. (2002). 'Views of nature and self-discipline: Evidence from inner-city children.' *Journal of Environmental Psychiatry*, 22,49-63
14. Ruiz-Gallardo, J & Valdés, A (2013). 'Garden-based learning: An experience with "at risk" secondary education students.' *Journal of Environmental Education*, 44(4), 252-270.
15. Lieberman, G & Hoody, L, (1998). 'Closing the achievement gap: Using the environment as an integrating context for learning'. *Results of a Nationwide Study*. San Diego: SEER
16. Chawla, L (2015). 'Benefits of nature contact for children.' *Journal of Planning Literature*, 30(4), 433–452.
17. Berezowitz, C et al. (2015). 'School gardens enhance academic performance and dietary outcomes in children.' *Journal of School Health*, 85(8), 508-518.
18. Williams, D & Dixon, P (2012). 'Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010.' *Review of Educational Research*, 83(2), 211–235.

19. Wells, N et al. (2015). 'The effects of school gardens on children's science knowledge: A randomized controlled trial of low-income elementary schools.' *International Journal of Science Education*, 37(17), 2858-2878.
20. Blair, D (2009). 'The child in the garden: An evaluative review of the benefits of school gardening'. *Journal of Environmental Education*, 40(2), 15-38.
21. Richardson, M. & Sheffield, D. (2017). 'Three good things in nature: Noticing nearby nature brings sustained increases in connection with nature.' *Psychology*, 8(1), 1-32.
22. Richardson, M., Hallam, J. & Lumber, R. (2015). 'One thousand good things in nature: The aspects of nature that lead to increased nature connectedness.' *Environmental Values*, 24 (5), 603-619.
23. D'Amore, C.; & Chawla, L. (2017). 'Many children in the woods: Applying principles of community-based social marketing to a family nature club.' *Ecopsychology*, Vol 9
24. D'Amore, C. (2015). 'Family nature clubs: Creating the conditions for social and environmental connection and care.' *Proquest*.
25. Moore, R & Wong, H (1997). 'Natural Learning: Rediscovering Nature's Way of Teaching.' Berkeley, CA: MIG Communications.
26. Kuo, M.; Barnes, M.; & Jordan, C. (2019). 'Do experiences with nature promote learning? Converging evidence of a cause-and-effect relationship.' *Frontiers in Psychology*. 10:305. doi: 10.3389/fpsyg.2019.00305.
- 27 Batty, D, 2022. 'Bird and birdsong encounters improve mental health study finds.' *The Guardian* <https://www.theguardian.com/environment/2022/oct/27/bird-birdsong-encounters-improve-mental-health-study>

# Training

## Natural Academy

The Natural Academy offer accredited trainings in ecopsychology and nature-based practice. The **NatureWell Experience** is an introductory inset training for teachers, supporting your staff team to experience their own nature connection and wellbeing with relaxation, restoration and revitalisation as primary resources, and a deepening understanding of methods, practices and interventions that can be applied in everyday life to support wellbeing. Some staff can then take this further into the **Applying NatureWell in Education** training, where we will look at nature-based interventions and activities that can support children's mental health and wellbeing, whilst also supporting their learning, emotional development and social skills. For more info, contact [www.naturalacademy.org](http://www.naturalacademy.org)

## Imayla CIC

Imayla is a youth and community organisation based in St Pauls Bristol. They offer a 6-month therapeutic programme for children and young people facing difficult times, using the creative arts and outdoors experiences to develop confidence, resilience and wellbeing. They also have a team of progression workers across the city, connecting families and children with opportunities for play and cultural and outdoor experiences. Imayla offer a training in **Taking your Practice Outdoors** for those working with hard to reach young people. for more info contact [jill@imayla.co.uk](mailto:jill@imayla.co.uk) or see [www.imayla.com](http://www.imayla.com)

## Cambium sustainable

Cambium sustainable offer training in forest schools, curriculum-based outdoor learning, Coastal School Training and more. See their website for upcoming training dates, [cambiumsustainable.co.uk](http://cambiumsustainable.co.uk)

# Further reading

## **Children and Nature Network.**

Richard Louv co-founded an organisation called the Children and Nature Network. Their website is a fantastic resource for research.

<https://www.childrenandnature.org/schools/>

## **Derby University Nature Connectedness Research Group**

Further information on the research behind the five pathways to nature connectedness

<https://www.derby.ac.uk/research/centres-groups/nature-connectedness-research-group/>

***Learning with Nature, A How-to Guide to Inspiring Children Through Outdoor Games and Activities.*** Marina Robb, Victoria Mew and Anna Richardson. Green Books, 2015

***The Coyote's Guide to Connecting with Nature.*** Jon Young, Ellen Haas, Evan McGowen. Owl Ink Media Corporation, 2010.

***The Children's Forest, Stories and Songs, Wild Food, Crafts and Celebrations All Year Round.*** Dawn Casey, Anna Richardson and Helen d'Ascoli. Hawthorn Press, 2019.

***Tracks and Signs of the Animals and Birds of Britain and Europe.*** Lars-Henrik Olsen. Princeton University Press, 2013.

***Wild Mind, A Field Guide to the Human Psyche.*** Bill Plotkin. New World Library, 2013.

A deep dive into ecopsychology, exploring emerging theory and nature-based practices for healing and cultivating wholeness on the land.

***Environmental Arts therapy and the Tree of Life.*** Ian Siddons Heginworth. Spirit's Rest, 2009

A monthly guide to the seasons through environmental art practices

***The Children's Fire, Heartsong of a people.*** Mac Marcartney. Practical Inspiration Publishing, 2018

One man's pilgrimage into Britain's ancient celtic past. The story explores a journey on foot across England and Wales to Anglesey. once the spiritual heart of Iron Age Britain.