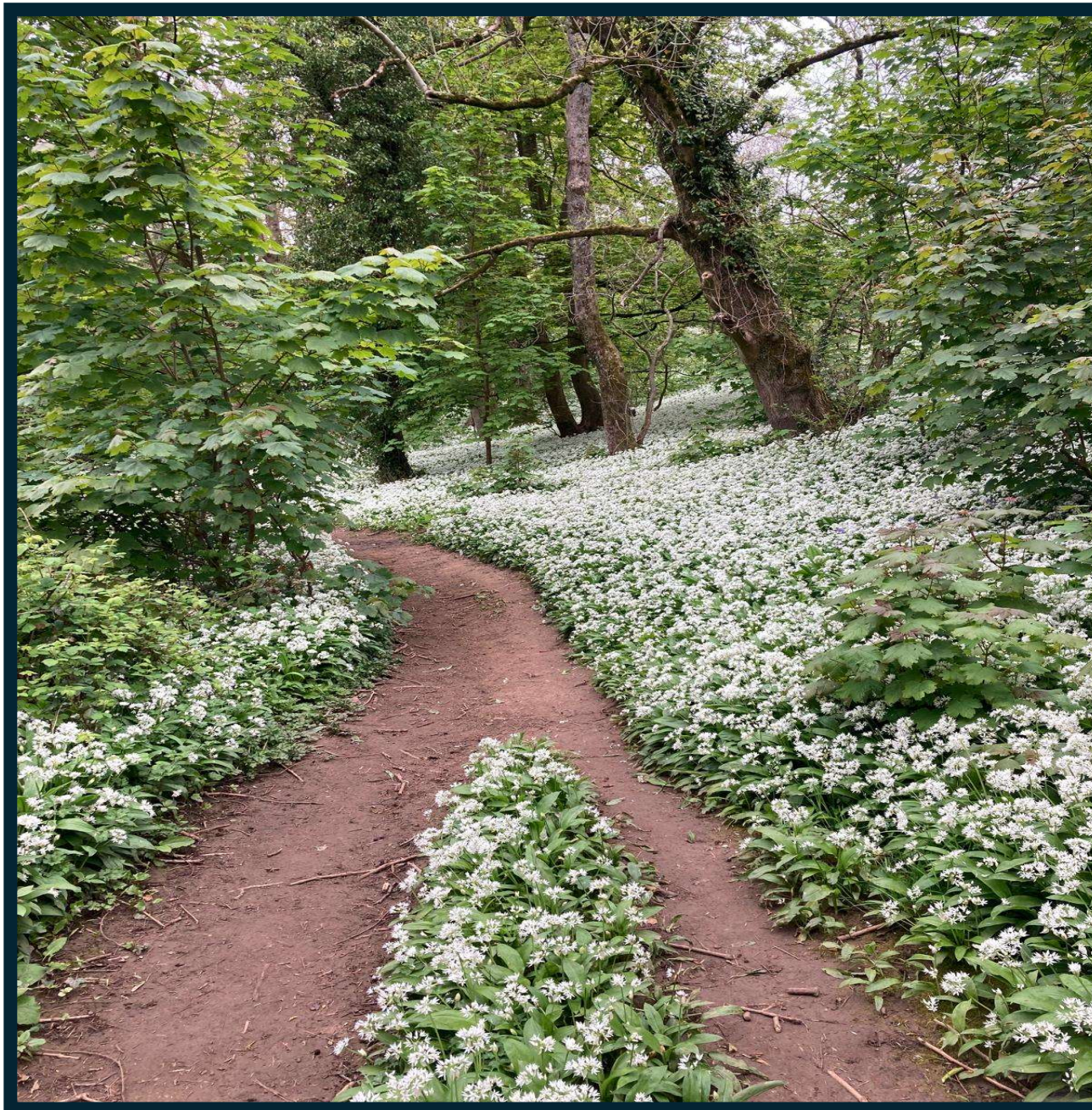




(Source: Llewellyn, 2022)

Part 2

Awe and wonder with wild garlic – a seasonal sensory walk through the local forest, outside of the setting.

- A group of 10 reception children with 2 adults. Week commencing 23/09/24
- Resources: buckets, trowels, magnifying glasses.
- Links to Science: The 5 senses and plant growth.

Hopefully the children will be excited to step into their learning environment for today's forest school session and enjoy exploring the abundant wild garlic! We are going to be nature detectives.....

The objectives of this part of the session are to decide what season we are in using the 5 senses and to identify and describe the structure of flowering plants whilst encouraging them to look after this beautiful environment.

The children will need to use their imagination and describe what the area looks, sounds, feels, tastes and smells like.

Firstly, on entering the forest ask them to describe what they can see. Are there any clues as to what season we are in? Use open ended questions such as: How do we know this and why do you think that? Ask them to describe the trees, the floor, the flowers, the sky. They will hopefully use language such as summer, autumn, winter, spring, leaves, flowers, trees, sunny, warm, cold, white, green, brown. Once the children have described what they can see, ask them what they can hear. The children can lie down on the forest path to do this activity. Ask them to close their eyes and listen. Have they heard these sounds before? If so, where were they? Ask them to copy the sounds. Are these sounds a clue as to which season we are in?

Ask the children to sit alongside the flowers and touch them gently. Model what this looks like. How do the leaves and flowers feel? What do you notice? Encourage them to pick a few of the leaves and crush them in their hands. What can they smell? Discuss what they think it could be.

N.B - The children cannot taste the garlic until the leaves have been washed, so encourage them to fill their buckets to take back to the classroom.

Ask the children to sit/stand on the pathway to pick the leaves in order to protect the plants. Use this opportunity to discuss what would happen if they walked over the plants. Why do you think it is important to look after our plants and trees?

Encourage the children to use their trowels to dig a few of the wild garlic plants out of the ground. Take a look through a magnifying glass. What can they see? What would you like to know? Encourage them to understand that the wild garlic has grown from the

small bulb. Can they explain how it grows? What do plants need to grow? How long do you think it takes for them to grow? How about the tress? They should use words like roots, bulbs, seeds, stems, leaves, flowers, light, water, sun, warm, cold, soil.

Links to Curriculum for Wales – Science and Technology

These activities support the children in becoming ethically informed citizens of Wales and the world as they start to make decisions about looking after their environment and understanding the impact they might have on it. These activities will also support the children's knowledge and understanding of their own bodies and the ecosystems around them therefore will help them to become healthy, confident individuals. By supporting the children in being curious about science through these activities, we will be encouraging them to ask questions about the world around us. Gaining knowledge from outside of the school environment will support the children's understanding of what they already know as they will start to make links and put their ideas together (hwb.gov.wales, n.d.). Taking part in these activities outside will be supporting the children holistically as they cover all areas of child development from physical, cognitive and intellectual to emotional, social and language development (Lunga, Esterhuizen and Koen, 2022).



(Source: www.foodforest.garden, n.d.)



(Source: Alamy Limited, 2024)



(Source: Davidwillis.info, 2017)

Links to Maths: 3 way repeating patterns and/or symmetry

The children can choose either activity -

Once the children have studied the plants, in pairs, they can collect a variety of natural resources from the forest floor. Give them time to explore and gather. Using their leaves, petals, stems, stones, twigs and anything else collected in their buckets, the children should then be given the opportunity to find their own space on the path to create their designs. Once they have finished foraging, bring them back together to model both activities.

If making a 3-way pattern they will naturally count, sort and design. Ask them questions such as what comes next in your pattern? How do you know? How many items are in your pattern altogether? Which shapes can you see in your pattern? Which is the smallest/biggest item in your pattern? These questions will give them lots of opportunities to think and talk like mathematicians!

Symmetry has previously been introduced in the classroom, so this activity will be an extension to their learning. They will need to find a long, thin, straight stick to use as their line of symmetry and place this on the floor. Again, they can work in their pairs. One will make the design on one side of the stick and the other will then copy the pattern, creating the symmetry. They can then start again, swapping roles. Use language such as: the same as, equal, half, pattern, right, left. Symmetry can be quite difficult and abstract to understand at this age so we should not expect them to produce perfect symmetrical patterns! However, it is an important part of learning about geometry and will help build on foundational maths skills.

As the children will be working in pairs, the spotlight will be more on them. This will enable them to practice communication and problem solving together. It will give them opportunities to enhance and develop their critical thinking skills which are useful not just in maths but in all areas of life. Listen for their mathematical language and model this where necessary. They will need to listen to each other and practice their teamwork skills. Encourage them to overcome any disagreements themselves by giving suggestions but let them decide for themselves. This will help support their emotional self-regulation.

This activity will also provide a good opportunity to discuss shapes with the children. Use the magnifying glass to look closer at all the items they have gathered. What shapes can they see? Which shapes have curved/straight sides? Which shapes have corners? Which shapes are symmetrical?

Lastly, ask the children to carefully gather as many of the garlic leaves as possible in their buckets to carry back to the classroom. These will be used to make wild garlic pesto tomorrow.

Links to Curriculum for Wales – Mathematics and Numeracy

These activities help to support the idea of maths being fun and creative for the children. They are engaging and accessible so will increase their mathematical resilience. This is important for the children as beyond the early years, they will need to work more independently. The shape and structure aspect of these activities will support their numerical reasoning development and help them to make sense of the physical world.



(Source: www.bushprimaryschool.co.uk, 2024)



(Source: Sherfield School, 2020)

RISK BENEFIT ASSESSMENT

Location / Activity:	Local forestry	Date:	23/09/24
Assessor:	Bianca Llewellyn	Review date:	23/09/25

The boxes in the table below will expand as you type into them; pre-entered text is simply for illustration. You should delete irrelevant items and replace with text relevant to your circumstances.
Your overall risk rating – Low, medium or high – is based on your judgement about whether the BENEFITS of the activity or opportunity outweigh the RISKS.

Experience exploring outdoor space in photograph.	How will young people BENEFIT from this activity?	Hazards and associated risks.	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury.	Overall risk after precautions RATING: Low/Medium/High
Walking through and exploring the forestry.	Children will be active which will encourage them to lead a healthy lifestyle. They will develop coordination, gross motor skills and core strength which will improve balance. Their social and emotional skills will be enhanced. Development of connection with nature. Awareness of senses.	Uneven ground - slips, trips and falls. Bumps or collisions with other children, trees or debris. Risk of minor injuries.	<u>Children</u> <u>And</u> <u>Adults</u> <u>for all</u>	Staff are first aid trained and familiar with the forestry paths. Health and safety talk before session. Wash hands at end of session. First aid kit available. Ratios maintained and meet the needs of the group. Children supported to access the activities appropriately.	<u>Low</u>
		Members of public/dog walkers sharing the forestry. Antisocial behaviour and safeguarding issues. Allergic reaction		Staff are DBS checked and small groups of children are always supervised. Safeguarding policies and procedures in place. Any volunteers to have safeguarding training.	<u>Low</u>
		Lost child/children.		Children to be supervised at all times by adults. Mobile phones to be taken. Adults at the front and back when walking over to and through the forestry.	<u>Low</u>

		Rubbish/faeces/sharps. Cuts, infection, illness, injuries Weather: strong winds, wet ground conditions, puddles, heat waves, etc. Injury, falls, sunburn Tree climbing. Scratches, rashes, cuts, broken bones		Children reminded not to put hands in mouth. Litter pick and faeces check of site beforehand where possible. Take appropriate rubbish disposal bags. Staff first aid trained. First aid kit available. Call CCBC to remove harmful items. Check site prior to visit. Children to take water bottles when needed and wear appropriate clothing/forest schools suits. Paths to be gritted if icy. In case of severe adverse weather, have the wet weather plan in place. Staff to take mobile phones. Staff first aid trained. First aid kit available. Benefits of play in all weather explained. Outdoor activity to end if risk of severe wind causes debris to fly around. Staff to be mindful of length of exposure to the sun. Not to be done during this session. Adults to supervise.	<u>Low</u> <u>Low</u> <u>Low</u>
Natural loose parts and scavenging for planned activity. To include, leaves, wild garlic, stones, sticks	Supports scientific and mathematical development. Creativity, problem solving, imagination, connection with nature. Will bring fun and enjoyment to the	Plants – toxic, irritant harmful plants (nettles, brambles, thistles) Thorns on overhanging branches. Falling branches from trees. Skin irritation, cuts, injury	<u>Children</u> <u>And</u> <u>Adults</u> <u>For all.</u>	Plants which have the potential to cause harm to be pointed out before the session in health and safety talk. Leader to take secateurs to remove overhanging branches. Session to be cancelled if risk of falling trees/branches due to high winds. Staff are first aid trained. First aid kit available.	<u>Low</u>

	children. Will support them in asking questions and finding solutions. Development of fine motor skills. Plant identification.	Digging soil, using trowels. Minor injuries, tetanus Natural material and plant collection. Minor injuries. Wild garlic. Can be toxic if a sack full is eaten. Insects. Bites, stings and allergies		Adults to be aware of risks. Any cuts to be covered. First aid kit available with antiseptic wipes where necessary. Supervising of children using equipment, model how to use and check before use Health and safety talk at beginning of session. Washing hands at end of activity. Children to be clear on what and where to collect loose parts and what they can and can't touch. Staff first aid trained. First aid kit available. Adults to make themselves aware of what wild garlic looks like so as not to confuse with Lilly of the Valley or lords and ladies: https://youtu.be/ZOYm1sXfHqY https://totallywilduk.co.uk/2018/11/10/wild-garlic-identification-allium-ursinum/ Staff first aid trained. First aid kit available. Report significant amount of bees/wasps to CCBC. Restrict area if there are swarms. Hygiene routines in place	<u>Low</u> <u>Low</u> <u>Low</u> <u>Low</u>
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Part 4

Playing and learning in the outdoors matters to children. This was recognised by theorist Friedrich Froebel who established the first “kindergarten” in 1837 through observing that where children are actively engaged in activities that are purposeful and outdoors, they gain a deeper understanding (Froebel 1887 cited in Macblain, 2018). Furthermore, Froebel has strongly influenced the Danish/Nordic pedagogical approach whereby children in their early years spend a large part of their day playing and exploring outdoors (Ringsmose and Grethe Kragh-Müller, 2017). The significant benefits of taking the classroom outside have been recognised by Welsh Government and included in the new Curriculum for Wales to support its four purposes with “cynefin” being included as a new concept which embodies the connection between people and the place where they live. Edwards (2022) states that by becoming a key feature of the curriculum, outdoor learning can help support children in their early years to gain a higher level of well-being and will have a positive impact on their social, emotional and physical development. As well as this it will help develop their imagination, curiosity and resilience whilst they gain an awareness of the impact they make on their environment.

Additionally, engaging in maths and science activities in the outdoors has enormous benefits for children in their early years as, according to Robertson (2017), foundations are laid for more complex work, as they grow older, when establishing connections between their hands, hearts and heads at a young age. Roberston also states that the natural environment provides endless amounts of textures, weights, patterns, quantities, colours and properties of which underpin those early maths and science experiences. Moreover Keith (2018) suggests that the key to developing a young child into a mathematical thinker is providing them with a play based rich environment which gives them opportunities to explore, make decisions, connections and build resilience.

Considering how important the outdoor environment is for early childhood development, it is crucial for practitioners to think carefully about how they plan and prepare their maths and science sessions as according to White (2019) outdoor practice and provision should be just as meaningful as indoor provision. The forest schools approach nurtures children's curiosity and natural tendency to learn and explore the world around them (Barrable and Arvanitis, 2018). It draws on Nordic examples of outdoor

kindergartens and philosophies of learning through play and child-centred practice (Harris, 2017). In this case, practitioners need to incorporate the outdoor learning space in the same set of plans as the indoor space states Knight (2013). Knight also suggests that the attitudes of practitioners may need to change as they need to regard the outdoors with equal validity, have an outdoor pedagogical mindset and be prepared to be outside in all weathers. A study by van Dijk-Wesselius *et al.* (2020) found that one of the most mentioned barriers to facilitating forest schools is the practitioners lack of confidence in their own outdoor teaching expertise followed by a lack of green space, especially in urban areas. However, Waite (2020) demonstrates that where practitioners have the ability to facilitate long-term forest school programmes with children in their early years, they help to foster self-belief, resilience, self-motivation, persistence and risk-taking. Waite-Stupiansky and Cohen (2020) acknowledges that all these attributes assist the development of STEM knowledge and growth in children. They also state that through child-led outdoor learning, STEM knowledge blossoms through experimentation, inquiry and problem solving and that nature provides STEM concepts to come alive. Child-led learning enables children to choose and direct their own play. It gives them the freedom to follow their curiosity and engage in activities that interest them (Jordan, 2024). In child-led play, the practitioner should not guide or create rules. Instead, the child's lead should be followed, and the practitioner should demonstrate an interest in the ideas that excite them. Vygotsky's social constructivist theory highlights this whereby the adult observes a child playing and understands when to support their development by stepping in to scaffold their learning (Pacey, 2016). Scaffolding is a pedagogical tool that, if used in the right way at the right time by an early years practitioner, can support children's knowledge and take it to the next step (Grand Canyon University, 2023). When a child is engaged in outdoor free play such as stirring a muddy puddle with a stick, the practitioner can use the opportunity to take their play to a higher level of learning by scaffolding (Tracy, 2015). Asking open ended questions such as "What do you think will happen if..." (Teaching and Learning Scaffolding, n.d.) will encourage more complex thinking to develop the child's scientific and mathematical knowledge. It is important that a practitioner does not presume that if they observe a child doing something independently in free play, that they will remain being able to do it recognises Bakker, Smit and Wegerif (2015). Therefore Henshall (2023) suggests to use phrases such as "it could be, it must be, it can't be" as simple ways to support and

develop children's understanding of science and maths. The child will need to focus on what to say in their answer which will help to develop their metacognition.

Forest schools can also benefit children in their early years by providing them with the freedom of movement, physicality and doing. According to White (2016) these have always been at the core of early years education philosophy as physical development underpins health, wellbeing and good physical functioning. Early theorists such as Maria Montessori designed learning spaces that enabled children to move about freely, had child sized furniture and easy access to materials. She also added gardening and gymnastics to daily activities (Pound, 2006). Additionally, in the early 1900's, Margaret Macmillan described the garden as "the essential matter" for young children as she believed they need space to explore, run and "feel life in every limb". To her, movement was essential and underpinned lifelong learning (Thomson, 2015). Early years practitioners have a vital role to play in providing opportunity for children to practice movement as not only does it increase health and well-being, but it positively supports their social and cognitive skills (PHYSICAL ACTIVITY GUIDE FOR EARLY YEARS PRACTITIONERS 2 3, n.d.). Furthermore, movement can reduce stress and improve mood which has a knock-on effect to a child's learning and motivation. Movement also supports physical brain function as it increases the ability of blood cells to absorb oxygen (Sargent, 2016a).

Different forms of movement and exercise are accessible to all at forest schools. A simple activity such as rolling down a hill can support the development of a variety of physical, maths and science skills. Practitioners can use positional and directional mathematical language, discuss gradient, force, measure and size as well as compare and contrast what happens on different surfaces (Sa.gov.au, 2022). Purves *et al.* (2001) state that rolling also helps to stimulate the vestibular system which provides a sense of balance and head position in space. Vestibular sense does not happen while a child is sitting still so enabling them to spin, roll, hang upside down, jump, hop, balance and skip all help to activate it (The, 2020a). An underdeveloped vestibular system can lead to problems such as frequent falling, delayed motor skills and fatigue (Curative.org, 2018). According to Shoval *et al.* (2015), between the ages of four to six is the period when a child has the most potential to significantly develop their sense of balance and

that being in control of your balance gives the ability to focus and maintain attention on learning activities. Their study proved that both individual activities indoors and group activity outdoors positively influence balance control.

Tree-climbing is another activity which can help to support mathematical and scientific development in young children and encourages the use of movement through loco-motor play. Space, height, motor planning, problem solving and using judgement and patience are all practiced as well as gaining an awareness of their mind and body whilst experiencing the thrill of climbing a tree (The, 2020b). At kindergartens in Norway, young children are allowed the freedom to control their own learning experiences, mainly through exploration and play in their local natural environment (Garden and Hirst 2022a). Climbing trees is part of their outdoor pedagogical approach and instead of being told to be careful and not to fall, are asked to not harm the tree as if they were to break the branch, there would not be any apples in the spring (Garden and Hirst 2022b). This approach helps to foster a positive attitude towards nature. There are enormous benefits to climbing trees and they far outweigh the risks. Once they start climbing, they can learn to manage their own risks by challenging themselves and according to Davies (2017) climbing a tree stimulates the senses and can be very calming for a child. This memorable and rewarding activity can also develop self-confidence and resilience. Aslanian, Andresen and Baasland (2020) found in their research from interviewing Norwegian children that they associated getting injuries with having fun and that getting hurt was not the main point of their description of getting hurt. Attitudes to children participating in risky activities such as tree-climbing in Nordic countries are very different to those in the UK suggest Maynard and Waters (2014). Within the UK itself, practitioners may have differing perceptions and attitudes towards risk which will, in turn, greatly affect how they facilitate outdoor play. When practitioners have negative attitudes towards taking risks, it can have a detrimental effect on children in their early years as they will not be promoting confidence in their capabilities. Furthermore, Waite (2017) says that practitioners need to have a deep knowledge of child development so they can effectively use the outdoor learning environment and understand its unique potential. Research by Welsh Government (2023) investigating how outdoor learning is being used in Welsh schools returned a low response rate despite it being widely accepted that outdoor learning has a positive

impact on the teaching and learning of children. The report stated that the low response rate could be associated with practitioners not finding outdoor learning a sustainable or effective pedagogy and that the barriers related to risks, confidence and policy outweigh the advantages.

Sargent (2016b) states that the outdoor learning environment offers scope to plan concrete experiences in purposeful contexts therefore is the ideal location to support mathematical and scientific development in the early years. Moreover, Scott *et al.* (2022) suggest that as young children learn very much through play, much of their engagement should be based around exploration of the natural world. Similarly, Van Andel Institute (2024) describe how when concepts are taught in the great outdoors, it fosters awe, wonder and excitement in young children, as well as gets them asking questions, finding solutions and taking on new challenges that they just would not get through learning indoors. Indeed, the new curriculum for Wales itself states that inspiring awe and wonder in children is provided by giving opportunity to play outdoors (Welsh Government, 2023). The role of the practitioner in seeing the magic of the world through the eyes of the child has never been so important.

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