# EAEY5005/C - Awe and Wonder: Science, Mathematics, and the Outdoors

## Section 1- Natural Learning Environment

*(Source: Bing, 2020).*

## Section 2

The children who will visit this environment will be a group of 16 children aged 5–7-year-olds, 3 adults will accompany them to ensure adult-child ratios are maintained as well as ensuring there is an extra adult to support the learning and child-led experiences.

The children can explore the long grass, spotting minibeasts that live in the grass, talking about what else they think might live in the grass, children then might pretend to be a snake, laying on the floor and hissing like a snake as they weave through the grass.

The area and experience provided in section 1 as part of the portfolio is a naturally rich area which includes grass both long and short, a small stream, trees, and uneven ground. Children would be able to explore, learn and play in this area and further their development across many areas. Children will be exploring an interesting and stimulating environment, encouraging their physical movement, health, and wellbeing through engaging with the natural environment and open-ended resources. The area above could be enhanced by adding bug catching pots, magnifying glasses, tyres, tarpaulin, scoops, pots and pans, nets, funnels, and baskets. Once improved, it can support children to participate in various activities that promote overall development for both them and the practitioners. it is crucial for children to embrace adventurous play and the positive impact it has on their growth. When children take charge of their play and engage in risky activities, they become more resilient and willing to take chances, even if there is a possibility of failure (Bridgeway Family Centre, 2023). The choice of environment, location, proximity to the school and the natural landscape of the environment has been carefully considered to ensure it includes features the children will be able to explore and interact with.

The local field was carefully selected for this experience while considering the opinion of Beames, Higgins and Nicol (2012) who believes that practitioners should chose outings and locations which can be easily accessed from their own setting as this means it can be a frequent learning experience and become a regular part of practice, using a location which is in the child's own environment provides them with opportunities to build a sense of identity.

Source (Bing, 2021).

Providing children with opportunities to explore life cycles focusing on their science development. Bug catching pots, nets, magnifying glasses, and buckets allows children to have a closer look at minibeasts that live in their local area and spark their curiosity. Bug hunting shows links to science and life cycles. Children could see butterflies, talking about what creates a butterfly, look in the long grass for caterpillars, children could create houses for caterpillars that they think they would be interested in.

The area is near the setting so this area can be visited regularly as part of our learning journey. The area is accessed via a footpath which will take 10 minutes to reach, this allows not only planned visits but also impromptu visits, following the children's interests and if they wish to visit in the afternoon when they come into the setting this can easily be achieved.

When first approaching the area, children were weary of what to expect, unsure of what play opportunities would be there for them, the children are given free time to explore and learn as they wish during the environment, with the support of adults should they wish to seek it.

The plan for the visit to the environment is to support children's Maths and Science learning in a holistic way, giving them the opportunity to be their own leaders and adults follow the children's wishes to learn. On the first visit to the area, the children were allowed to explore unrushed in the area, and the adults observed, ensuring the children were not in any danger and listening to what the children wanted to learn/explore/experience in that area. After the first visit the children were asked what they would like to take with them next time they visited, many children expressed interest in minibeasts, and others expressed wanting to play in the stream and take nets and buckets. This was noted by practitioners and resources were gathered to take on the next visit.

The children will be allowed to freely explore the environment and play will not be interrupted, unless necessary. Ideally children will have a full afternoon to explore the area, weather dependent.

To support he children to further their learning by playing in the small stream by providing nets, buckets, scoops, and funnels for them to scoop and pour the water. Children will be able to use the equipment as they wish although guidance will be provided if they show an interest in the wildlife that lives in the environment. Staff will be equipped with knowledge to ensure they can further the children's learning.

Source (Bing, 2015).

After a few visits, the children will begin to show care and respect for their environment. They will watch the environment change through the seasons and begin to question why things have changed. Children will become caring and intrigued by the environment. Some children may want to look at what lives in the water, they may ask 'is there any fish?' and talk amongst themselves about what could live there. Some children will understand what creatures live in the water, whereas others will use their imagination when considering what lives there. Practitioners will support the children with their interests in the creatures by

talking about fish, frogs, tadpoles, and ducks. This can link into the children's science development as they talk about life cycles and habitats.

The children will be allowed to freely fulfil their needs in reference to developing schemas. For example, transporting schema, the children will be allowed to collect natural resources and be provided with baskets, bags, and buckets to carry objects. Using natural resources like large stones, sticks and mud they can enclose the water and stop it from flowing in the stream. The children can also to explore their trajectory schema by moving objects, throwing different objects, and developing an understand of heavy versus light, for example how far can they throw a leaf compared to how far they can throw a small pebble. Children will be guided by practitioners on how to safely perform these actions to ensure no harm comes to themselves or others around them.

As with any activity, there are several risks that the children to be protected from. There could be plants that could pose a risk to the children if they put it in their mouths, children will be made aware not to pick any plants without checking with an adult first. The stream also poses a risk of drowning, so children will be always supervised when exploring the water. The uneven ground with hidden dips could cause trips and falls to children who are unfamiliar with uneven ground. Before visiting, practitioners will talk with children about taking our time, playing the 'wibbly wobbly game' with them where the children practice walking with their arms out to the side to balance and extra support will be offered to children who may struggle with this.

The children's interests will be followed throughout our visits to the environment. Children may become interested in colour matching with the vibrant colours of the flowers, trees, berries, and grass as the seasons turn to spring, colour swatches can be brought along to the environment for children to follow this interest. Identify and colour match with various objects and loose parts will support their colour recognition and being leaders of their own learning.

# Section 3- RISK BENEFIT ASSESSMENT

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| **Location / Activity:** | Woodland | **Date:** | 20/09/23 |
| **Assessor:** | Samantha | **Review date:** | |

| 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: L/M/H** |
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| Water/ Stream | • Experiment with floating and sinking<br>• Pouring and scooping skills<br>• Social and emotional development<br>• Develop fine and gross motor skills<br>• Water can be relaxing and calming<br>• Builds their language and communication | • Drowning<br>• Wet clothes<br>• Dirty water, when ingested could cause illness<br>• Poor visibility in the water, could be unseen objects which pose a risk | Children and adults | • Ensure the correct ratios are being used for adult to children<br>• Create golden rules with the children so they are aware of the dos and don'ts near water<br>• Model the safe way to play around water – ensure children are aware they do not enter the water without an adult | M |
| Uneven ground | • Promotes physical development and gross motor skills<br>• Promotes balance and coordination<br>• Develops strength and endurance<br>• Builds core muscles<br>• Promotes confidence in movement | • Slopping slippery surfaces can cause trips and falls<br>• Can cause injury if falling down the slope | Children and adults | • Ensure the correct ratios are being used for adult to children<br>• Create golden rules with the children so they are aware of the dos and don'ts on slope<br>• Assess the children's ability before allowing them on the slope | L |
| Plants | • Can make potions from plants<br>• Explore and learn about different plants<br>• Compare different plants via look, touch, smell<br>• Increase children's interest in consuming fruits and vegetables<br>• Can be used as a decoration or playing tool<br>• Understand how plants are a living thing and can grow | • Poisonous plants that children might touch/ put in their mouth<br>• Some plants contain allergens, and some may be sensitive to these which can cause an allergic reaction | Children and adults | • Ensure the correct ratios are being used for adult to children<br>• Create golden rules with the children so they are aware of the dos and don'ts near plants and that children are not allowed to touch a plant without checking it is safe from an adult<br>• Ensure adults are informed of what plants are safe and what poses a risk<br>• If aware of pesticides being used, then ensure children stay away from plants<br>• Be aware of children with allergies to any plants | L |
| Long grass | • Stimulate their imagination<br>• Educating them with respects to insects and other bugs associated with the habitat | • Uneven ground<br>• Floor can be wet and slippy<br>• Hidden animals/ bugs which could | Children and adults | • Ensure the correct ratios are being used for adult to children<br>• Create golden rules with the children so they are aware of the dos and don'ts | L |

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| | • Introduce them to wild habitats | pose a threat to the children<br>• Losing children in the long grass | | • Encourage children to be mindful of other creatures that may be living in the grass such as hedgehogs, frogs, birds, and bugs.<br>• Appropriate clothing and footwear | |
| Trees | • Provide shade and cooling during warm weather<br>• Provides habitat for insects, birds, and animals<br>• Children can climb and explore | • Falling branches<br>• Cuts and bruises<br>• Animals who inhabit the tree<br>• Falling out of the tree while climbing | Children and adults | • Ensure the correct ratios are being used for adult to children<br>• Create golden rules with the children so they are aware of the dos and don'ts when climbing the trees<br>• Assess the children's ability before allowing them to climb tree | L |
| Minibeast collecting | • Develop knowledge and understanding of creatures in the environment<br>• Develop scientific knowledge of life cycles<br>• Develop fine motor skills by using small pots, nets, and magnifying glasses to collect and observe the minibeasts. | • Stings, bites, or allergic reactions from encountering the minibeasts<br>• Cuts or bruises from misuse, broken or badly maintained equipment | Children and adults | • Ensure the correct ratios are being used for adult to children<br>• Create golden rules with the children so they are aware of the dos and don'ts when observing and collecting the minibeasts | M |

## Section 4 (1800 words, 30 marks).

This planned visit will incorporate the four purposes outlined in the new curriculum for Wales (Welsh Government 2020). The Welsh Assembly government (2008) skills of developing a sense of awe and wonder at the beauty of the landscapes, habitats and living things, caring for the environment, and recognizing its importance will be delivered through this visit. The Framework for children's learning in Wales states that the environment should focus on using the outdoor environment as a resource for children's learning through promoting discovery and independence (Welsh Gov, 2009).

The outdoor environment is ideal for unique opportunities to be offered to children for experiential learning, to move, be noisy, take risks and to be creative, the outdoors consists of several factors which can influence and enrich their play, for example, sounds, textures, weather, and smells (Welsh Gov, 2009). The children's social, creative, cultural, physical, and personal development will be developed whilst given the chance to explore the outdoors. Their physical fitness and health will improve by being able to jump, run, skip, and use equipment and toys which would not typically be allowed inside. Experiencing nature, the seasons changing, the weather and how plants and animals grow and live first hand will further enhance their knowledge of the world around them.

Piaget was a Swiss psychologist who focused on the cognitive development of children, Piaget proposed that children actively construct their understanding of the world through hands on experiences and interactions (Cherry, 2022). Piaget's theory emphasizes the importance of play and exploration in a child's learning process. When it comes to bug hunting and outdoor play, Piaget's believed that hands-on experience and exploration in nature are crucial for children's cognitive development.

For learning to be effective with outdoor play it must be given the same importance and resources as indoor play. Vygotsky's model of social learning (Vygotsky, 1978) suggests that the frequency and quality of interactions between practitioners and children are at the core of the learning process. Vygotsky agreed with Piaget that cognitive development happens in stages. However, he believed that learning is a social process, where children learn from experienced adults.

Loose parts play is fantastic for fostering independence in children. It gives them the freedom to explore diverse materials on their own, encouraging their autonomy. The best thing about using loose parts for play is the endless possibilities and variability they offer. It allows children to be creative and imaginative in their play. Children can easily lose interest in objects that have only one purpose. Once they discover that pressing a button or completing a jigsaw puzzle leads to just one outcome, they seek new and different experiences. Loose parts provide endless opportunities for play as children can arrange, scatter, transport, manipulate, assemble, and reimagine these parts in countless ways. It sparks their creativity and keeps the play exciting and engaging. Practitioners can help children by making a wide range of loose parts easily available to them. From boxes and blocks to beads, sticks, ribbons, stones, and rings, the possibilities are endless. It encourages their creativity and exploration.

When children engage all their senses through play with loose parts, it helps build neural pathways in their brains and enhances their cognitive skills later in life. Practitioners can provide a variety of materials like wood, yarn, clay, fabric, cardboard, and sponge for young learners to explore and play with. It is a fantastic way to stimulate their senses and promote holistic development.

adding natural materials like water, sand, mulch, dried leaves, mud, and berries to the mix allows children to explore a wide range of colours, shapes, and textures. The portable and versatile nature of loose parts encourages children to move, use their limbs, and engage in physical manipulation. Practitioners can enhance this process by providing scarves, hoops, and ribbons for children to twirl, wave, and flutter, giving their gross motor skills a fantastic workout. It is all about creating a rich and dynamic play environment.

One of the fantastic advantages of using loose parts for playtime activities is that they are affordable. Instead of buying expensive equipment, you can find small boxes, jar lids, buttons, and colourful cups by rummaging through homes and centres. Loose parts provide endless opportunities for imaginative play, as they do not come with instructions. Children can use their own imagination and assign distinct roles to these objects. A simple stick can become a magic wand, a fishing rod, a spoon, or even a bridge for caterpillars. The possibilities are truly limitless.

Loose parts provide children with the opportunity to create their own stories, experiment with distinct roles, and explore multiple perspectives. Blocks, pebbles, and bottle caps can be used in sorting, classifying, combining, and separating activities, which are excellent ways to introduce numeracy skills. When children are encouraged to describe the physical properties of loose parts, such as colour, texture, weight, shape, and even the sounds and smells they make, it helps them build language skills and expand their vocabulary. It is a wonderful way to combine play, learning, and language development.

Moving and manipulating loose parts provide children with opportunities to practice position language, such as "on top," "underneath," or "next to." Loose parts can be used as tools for creating art. Children can dip a leaf in paint and press it onto a page or use a feather as a paintbrush. It is a fantastic way to combine creativity and sensory exploration.

Higgins (2009) argues that when children develop a connection with their own environment, it becomes a foundation for connecting with the larger world, fostering a sense of identity and nurturing responsible citizenship The Welsh Government (2008) believe that understanding the consequences of our actions helps us develop empathy for the environment, they think it is important children become mindful of how their choices impact the world around them. Similarly, Malone (2001) explains that play and learning experiences in a child's environment help them develop a sense of belonging, identity, self-worth and become active members of their community. It is a wonderful way for children to grow and thrive. Furthermore, Donaldson (2015) stated in his review of the curriculum for Wales that it emphasizes helping children understand their place in the world, starting with their local area. It helps them to foster a sense of connection and global awareness.

Vygotsky believed in the concept of "scaffolding," where practitioners and other children provide support and resources to help a child build on their current knowledge. Loose parts play is a perfect way to scaffold learning and skills. For example, before children can hold a pencil or use scissors, they need to develop their fine motor skills by picking up small objects. Loose parts play with beads, sticks, and other materials can help children develop these skills. It is all about providing the right support at the right time.

Loose parts play allows children to express their individuality and agency. It is amazing how two children can create completely different things with the same collection of loose parts, and both are equally valid. Practitioners play a crucial role in providing a safe and nurturing environment for children to freely explore and express themselves. Natural items in loose parts collections can deepen children's connection with the natural world, fostering a sense of responsibility for the environment and community. It is a beautiful way to encourage creativity and environmental awareness.

There is a common misconception that play resources need to be new and expensive, but the best resources are often those that spark imagination and curiosity. As McClintic & Petty (2015) pointed out, the outdoor environment offers children the freedom to experience elements and feelings that may not be

possible indoors. Natural materials like sand and mud provide valuable learning opportunities for children, allowing them to reconnect with the natural environment and engage in symbolic play. It is all about using their senses and exploring the properties of nature.

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