

It is no question about what impact outdoor play has to a child's learning providing a wide range of benefits to a child's holistic development in this essay I will be evaluating the role of the adult in supporting maths and science in the outdoors. In this essay the main points I am going to be focusing on the adult's role in providing children with an enabling environment that supports and promotes mathematics and science in the outdoors. As well as affordance and loose parts.

The Welsh government's (2022) curriculum for non-maintained nursery settings highlights the importance of an enabling environment. Suggesting that exploration in the early years is one key aspect of a child's development. Therefore, children having the opportunity to explore their environment children obtain a sense of belonging and can appreciate the world around them. According to Tovey (2015) Froebel believed that through gardening, exploration and play outdoors, children gain an insight of nature. Therefore, are able to understand how to take care of it. Brown (2012) supports this further suggesting that children have direct experience of nature by having opportunities to play in and explore the outdoors.

Furthermore, Tovey (2015) discusses how adults can support maths and science in the outdoors by providing children with an outdoor environment that allows children to move their whole bodies in the space which supports their physical development and sense of self. As well as opportunities to experience different scientific concepts such as force, gravity, energy and height. This could be provided by having different resources that can provide children with the opportunity to climb and slide. Welsh Government (2022) states in outdoor environment children are able to explore, practice develop their skills. Richardson (2013) highlights the importance of providing children with an outdoor environment stating that children have the freedom to experiment and be more imaginative with the resources provided to them. Richard (2013) also states that for children to get the most out of the outdoor environment they need to experience it directly so that children can authentically experience the world around them, the elements and changes in weather. Therefore, providing opportunities for children to explore concepts such as volume, height, weight and distance is essential in providing a child with an outdoor enabling environment in which they can experience different elements and experiment with open ended resources that scaffolds children's curiosity and experimentation.

Moreover, one example of how practitioners can help to provide an enabling environment is providing loose parts. White (2019) and Nicholson (1971) propose that adults need to provide children with an enabling environment that has access to both natural and manmade loose parts such as rocks, twigs, leaves, tyres, ropes and planks of wood. In order to encourage children to consider and explore mathematical and scientific concepts such as weight, gravity, friction and volume through play. Play Scotland (no date) suggests that loose parts are materials in which can be interpreted as anything the child imagines it to be. Therefore, promoting and encouraging a child's curiosity and imagination as loose parts allow children to explore and gain a better understanding of the world. As loose parts can make

children aware different textures, shapes, properties and colours while also giving them an opportunity to explore mathematical and science concepts such as grouping, counting and matching. Similarly, Nicholson's (1971) loose parts theory discusses how providing children with open ended, movable resources can help to promote a child's problem-solving skills as they are able to experiment with building, mixing and inventing different things from the resources provided. Nicholson (1971) also highlights the opportunities for a child's creative thinking skills to be developed with the use of loose play as there are so many variables. However, Robertson (2017) suggests that the way in which loose parts play is facilitated plays an important role in how the children experience and perceive loose parts play. Ecokids (2018) suggest that loose parts award children with an abundance of nature in environments in which they may not have the access to materials they need to support their creativity. Children will naturally investigate loose parts and identify potential uses for them, so sufficient opportunities to partake in loose parts play can help to support and develop a child's cognitive and physical development. Ecokids (2018) suggests that these experiences encourage children to have a resilient body and flexible mind. According to the new curriculum of Wales (2022) the role of the adult is to guide and facilitate children's exploration in open-ended and play-based environments. By observing a child's interaction with open-ended materials practitioners can identify what concepts the child may have a good grasp of and how they can scaffold that child's learning to further their understanding. Whereas Jones (2017) implies that loose-parts play can be limited dependent on whether or not the adult recognises the significance of open-ended play in learning.

This leads me to my next point of affordance. Gibson's (1966) affordance theory suggests that the world is not only perceived in terms of objects but in terms of the possibilities the objects can provide. Moreover, early years education (2016) discusses the affordance in terms of play suggesting that children are 'affordance connoisseurs' who will naturally search for play opportunities through interacting with their environments. Furthermore, Welsh government's (2022) curriculum for non-maintained settings highlights the importance of settings providing an environment in which supports a child's holistic development and incorporates play-based learning that supports and encourages a child's curiosity. Facilitators can scaffold a child's understanding of mathematical and scientific concepts by providing outdoor environments which integrates aspects of the curriculum. By doing this, practitioners can reinforce a child's understanding by providing children with activities which promote cross-curricular learning. Welsh government (2022) also highlights the importance of catering to each individual child's interests, practitioners can ensure that the environment enables all children to engage and enjoy the activity by observing the children to highlight potential hidden affordances in the open-ended materials and adapt the environment accordingly to suit their interests. Therefore, the role of the adult is to understand and utilize affordances in the outdoor environment by creating enriching experiences that scaffolds the children's development and creativity. Play affordance can provide ample opportunities for

children to explore and experiment with maths and science concepts which help to promote and scaffold their understanding of these concepts.