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Section 1



(Source: Harrison, 2021)

Section 2

Feature One- Fallen Tree

This feature provides open-ended play and learning opportunities for children. Children can use their imagination and creativity to use the tree to be whatever they desire, known as play affordance, such as an aeroplane, a train or to walk the plank. This type of play promotes communication and develops social skills in children as well as gross motor skills where children are able to climb, balance on, jump off and over the fallen tree. Loose parts being made available here will also encourage creative thinking and learning. Children will be able to use materials to make dens or structures and use problem solving skills to ensure these are functional and structurally secure. The use of planks of wood or guttering to make ramps to roll natural resources, balls or vehicles down can develop understanding of forces in line with the learning descriptor 'Forces and Energy Provide a Foundation for Understanding Our Universe' (Welsh Government, 2020b). 2D and 3D shape can be explored using the tree trunk and the circular rings within it. Children can measure the length and circumference of the fallen tree as well as using mathematical concepts and language to compare and contrast such as big, short, tall, taller than, longer than, shortest, longest and tallest. This is in line with the learning descriptor 'Geometry Focuses on Relationships Involving Shape, Space and Position, and Measurement Focuses on Quantifying Phenomena in the Physical World' (Welsh Government, 2020a).

Feature Two- River

The river provides a wide range of cross-curricular play and learning opportunities for children. The stepping stones can be used as a bridge to balance on to walk from one side of the river to another. The children can jump and splash in the water as well as climb up and down the bank to access the river providing opportunities to develop gross motor skills as well as promoting risk taking behaviours in a safe environment that in turn positively impacts well-being, confidence and self-esteem. Scientific concepts such as

floating and sinking can be explored and discussed using a variety of natural materials within the environment. This can be extended and enhanced by an adult providing additional materials in line with the learning descriptor 'Design Thinking and Engineering Offer Technical and Creative Ways to Meet Society's Needs and Wants' (Welsh Government, 2020b). An example of this would be the use of modelling clay where the children could be set a challenge to form a shape with the clay that will float promoting problem solving and experimenting with materials. Adults could also ensure a variety of pots, jugs, cups and containers were accessible to children for filling and pouring activities whilst in the river. Mathematical concepts can be introduced here such as experimenting with and understanding volume as well as counting and mathematical language such as more than and less than in line with the learning descriptor 'The Number System is Used to Represent and Compare Relationships Between Numbers and Quantities' (Welsh Government, 2020a). Loose parts such as guttering, tubes, rope and wooden planks can also be accessible here to encourage children to build a transportation system for the water to travel from one area of the river to another promoting problem solving and collaborative working with communication between groups of children. Leaf and twig races can be used to demonstrate the force of currents and tides in line with learning descriptor 'Forces and Energy Provide a Foundation for Understanding Our Universe' (Welsh Government, 2020b).

Feature Three- Wildlife and Living Things within the Outdoor Space

In line with Curriculum for Wales (2022), children will be afforded a range of opportunities to develop knowledge and understanding within the learning descriptors 'The World Around Us is Full of Living Things which Depend Upon Each Other for Survival' and 'Being Curious and Searching for Answers is Essential to Understanding and Predicting Phenomena' whilst accessing this outdoor space (Welsh Government, 2020b). This environment is home to a variety of wildlife such as insects, birds, frogs and other small mammals as well as other living things such as trees and plants. Adults can introduce technology and media in line with the learning descriptor 'Computation is the Foundation of Our Digital World' via the use of iPads, digital cameras and books (Welsh Government, 2020b).

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Children will have the opportunity to take photographs of insects, animals, birds and plants they find within the environment and then find these in a variety of books to look at different facts, which in turn invokes discussion supporting language and communication skills. The addition of nets, magnifying glasses, binoculars and bug pots encourages further exploration of the environment and the living things within it. Different habitats for different animals can be discussed and with the use of twigs, leaves, mud and other materials naturally found in the environment, children can build their own birds nest. This type of activity will reinforce the learning of habitats but also provide opportunities for problem solving and collaborative working under the learning descriptor 'Matter and The Way It Behaves Defines Our Universe and Shapes Our Lives' (Welsh Government, 2020b). Children will be able to explore the properties of the natural materials and how the materials can be used and changed to build a bird's nest, for example, the change in muds property when water is added. In addition, life cycles of animals and plants can be explored. Children can catch frog spawn and take it back to the classroom environment where they will not only learn about how to care for living things but also see the changes from frog spawn to tadpole to frog. Children can study the leaves using the magnifying glasses seeing the roots, cells and veins. Life cycles of plants can be addressed including the introduction on photosynthesis and different types of gases such as carbon dioxide and oxygen and their uses. This can be developed further into learning about other scientific concepts and cycles such as how rain or clouds form using new language such as evaporation, condensation and precipitation.

I feel that the three features identified above from the photograph provide play and learning opportunities across the curriculum for children. Whilst some examples of the types of activities and areas of learning that can be explored have been outlined in this section of the portfolio, I believe that the type of environment depicted in the photograph lends itself to a non-exhaustive list of opportunities that can be enhanced and differentiated by adults to support children's learning and development inclusively.

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Section 3

RISK BENEFIT ASSESSMENT

Location / Activity:	Woodlands (Photograph attached at beginning of document) / Outdoor Open-Ended Play session	Date:	26 th September 2021
Assessor:	Tracy Harrison	Review date:	26 th September 2022 (or before if required)

ACTIVITY	How will young people BENEFIT from this activity?	Possible hazards	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk RATING: L/M/H
Exploring, running, balancing, jumping, climbing, etc. on Fallen Tree and Uneven Terrain	Promotion of independence and freedom to explore risk taking activities/resources builds confidence, self-esteem, resilience and emotional well-being. Exposure to further opportunities that support the vestibular and proprioceptive senses through physical activities that are challenging, stimulating and fun. Opportunities for creative and imaginative play whilst supporting communication, collaborative working, language development and social skills.	Falls or trips when climbing and jumping on or over fallen tree resulting in injury Falls, slips or trips resulting in injury on general uneven surfacing in woodland area taking into consideration underground tree roots, wet surfaces, etc.	Children and Staff	High staff to child ratio at 1:3 (above Care Inspectorate Wales' National Minimum Standards requirement) to ensure supervision and accessible adult support is available at all times for children Qualified Paediatric First Aider and appropriate first aid equipment on site at all times. Children and adults will be provided with appropriate clothing to wear for the weather and outdoor environment such as closed toe shoes or wellies. Prior to the session children will devise rules and boundaries as a group with the support of staff. These will be discussed and revisited when the children access the outdoor space before play begins ensuring understanding for all.	Low

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	Supports learning of mathematical language, concepts and use of measuring tools.				
Explorative River Play	Supports learning of current, forces, floating and sinking. Opportunities for gross motor skills to be developed and enhanced. Supports learning of mathematical concepts such as volume as well as mathematical language. Supports communication and problem solving skills. Opportunity for sensory play.	Drowning Slips, trips and falls resulting in injury on uneven and wet surfaces or whilst climbing up and down river bank and stepping stones for access and egress	Children and Staff	High staff to child ratio at 1:3 (above Care Inspectorate Wales' National Minimum Standards requirement) to ensure supervision and accessible adult support is available at all times for children Qualified Paediatric First Aider and appropriate first aid equipment on site at all times. Prior to the session children will devise rules and boundaries as a group with the support of staff. These will be discussed and revisited when the children access the outdoor space before play begins ensuring understanding for all. In addition, a visit from a local lifeguard to discuss water safety with the group will be arranged prior to the session taking place. Wet weather clothing and wellies will be provided for the children and staff to avoid slips, trips and falls.	Low

Exploring Wildlife, Living Things and General Outdoor Environment	Independent exploration and freedom promotes self-esteem, confidence and emotional well-being. Supports learning of life cycles, habitats and how living things thrive and need care. Gross Motor Skills and Fine Motor Skills are enhanced through lifting, bending, using collecting equipment such as scoops, tweezers, etc. Digital competence is promoted through the use of technology such as iPads and digital cameras. Language skills and vocabulary are developed.	Insect stings and bites Injuries caused by lifting rocks, touching plants, low level twigs and foliage etc. whilst looking at habitats and finding living creatures to explore	Children and Staff	High staff to child ratio at 1:3 (above Care Inspectorate Wales' National Minimum Standards requirement) to ensure supervision and accessible adult support is available at all times for children. Qualified Paediatric First Aider and appropriate first aid equipment on site at all times including information regarding allergies and personal epi-pens for individuals with identified allergies to insect stings. Prior discussion to determine rules and boundaries as a group ensuring children are aware that no objects, plants, insects or other materials found in the outdoor environment should be put in mouths or eaten. Introduce games with pictures of foods and other non-edible objects where children identify what is safe or not to put in their mouths. Children and staff will have access to anti-bacterial hand gel throughout and at the end of session for use. Once children and staff return to setting, all will wash hands with warm water and soap.	Low
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Loose Parts Play	Open-ended, imaginative and creative play opportunities led by the children such as den building. Encourages collaborative working and problem-solving skills. Promotes language, communication and social skills. Supports and enhances scientific and mathematical learning such as volume and forces as well as mathematical language.	Injuries from carrying, lifting or dropping a variety of sized and weighted resources Small resources present a possible choking hazard	Children and Staff	High staff to child ratio at 1:3 (above Care Inspectorate Wales' National Minimum Standards requirement) to ensure supervision and accessible adult support is available at all times for children. Qualified Paediatric First Aider and appropriate first aid equipment on site at all times including information regarding allergies and personal epipens for individuals with identified allergies to insect stings. Rules regarding objects being put in mouths or swallowed discussed and adopted prior to session being undertaken. 'Good Practice' shared with children regarding Manual Handling such as lifting in pairs, asking for help, etc. prior to activity session being undertaken	Low
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Section 4

Early Childhood Today (2021) state that within Piaget's Theory of Cognitive Development it is suggested that children have distinct thought processes and logic which differ from that of adults, therefore children construct individual theories of the world. Kandola (2019) agrees suggesting that children develop through exploration and interaction with the environment to support the understanding of people, objects and concepts. Kandola (2019) continues that Piaget viewed this form of exploration as naturally occurring, without the need of adult support. Early Childhood Today (2021) suggests Piaget's theory views the role of the adult as an observer and guide to support children in building knowledge, therefore the adult should provide an enriched, high affordance environment, as shown in the photograph, for exploration and interaction to take place. NICE (2008) suggests adults enable active play by creating an environment whereby children have freedom and autonomy to explore, suggesting the adults role is to observe and understand interests that in turn lead to creating the correct play environment that is enriched with materials and resources. As suggested by Play Scotland (2021) 'loose parts' are open-ended resources that children are able to use creatively in play to enhance imagination, problem-solving skills and communication. Fox and Wirth (2016) agree suggesting using loose parts as a resource for learning through play provides opportunities for children to be inventive and explorative that in turn drives learning. Furthermore, Ranheim (2020) suggests that loose parts found in nature such as leaves, twigs, pebbles and pinecones are particularly suited to support the development of mathematical concepts due to the array of open-ended possibilities afforded to children when engaged with such resources. Furthermore, Fox and Wirth (2016) suggest that loose parts such as bark from trees provide mathematical learning opportunities regarding sequences and pattern, that link with Curriculum for Wales (2022) learning descriptors 'Algebra Uses Symbol Systems to Express the Structure of Mathematical Relationships', that plastic, manufactured toys would not afford children. Play Scotland (no date) suggest that play environments are richer where loose parts are made accessible to children, therefore it is essential that adults plan for and enhance environments with these resources. Play Scotland (no date) continues that adults also

have to sensitively support children in loose parts play, resisting the urge to intervene frequently, allowing children time and space to discover , invent, investigate, explore and direct individual learning.

As suggested by Duncan (2013), nature is a gift to children's senses and minds affording opportunities and experiences that benefit holistic development. White (no date) shares this view suggesting children thrive in outdoor spaces with the development of the mind and body being enhanced through real experiences and play opportunities. Furthermore, Tovey (no date) suggests that the outdoor environment is considered a central and essential factor in the Froebelian approach as Froebel believed children learn best through rich, sensory first-hand experiences. Jensen and Bullard (2012) agree suggesting mud, which is accessible in the outdoor environment in the photograph, is a freely available basic element of nature that encourages exploration and experimentation due to its intangible nature. Furthermore, Jensen and Bullard (2012) argue that mud play enhances a range of developmental areas including science and mathematical skills as children can explore mud in wet or dry states, investigate differences between solids and liquids, the concept of volume and develop problem-solving skills. However, Aziz and Said (2016) suggest the extent in which children engage in and learn through outdoor play is influenced by the design of the outdoor environment. MA Education (2016) states that Gibson's Theory of Affordance (1966) suggests an affordance is an object in an environment that offers a possibility or function to an individual that influences interaction with the object such as the fallen tree in the photograph. In addition, Play Scotland (no date) suggest affordance is the potential of what an object or environment can do or be to an individual with such affordances being abundant and coming to life in natural outdoor environments. Loebach, *et al.* (2021) agrees suggesting the diverse and unstructured opportunities within outdoor environments allow children to develop creativity and problem solving skills as well as enhance learning outcomes across the curriculum. MA Education (2016) continues that when an environment is rich with play affordance, offers of endless possibilities and potential for play, exploration and learning are provided for children. Furthermore, Sando, Beate and Sandseter (2020) suggest that affordances within outdoor environments support physically active play and well-

being simultaneously. However, Beate and Sandseter (2009) highlight the importance of adults allowing children mobility licence within the environment that work in correlation with play affordances. Beate and Sandseter (2009) suggest for play affordances to be actualised for children, adults must provide time, space and freedom for children to engage in risky play and explore creatively. As suggested by Tovey (no date), children are able to experience and engage with key concepts such as gravity, speed, forces and life cycles in high affordance outdoor environments. This supports scientific learning in line with Curriculum for Wales (2022) learning descriptors 'Forces and Energy Provide a Foundation for Understanding Our Universe', 'The World Around Us is Full of Living Things which Depend Upon Each Other for Survival' and 'Being Curious and Searching for Answers is Essential to Understanding and Predicting Phenomena' (Welsh Government, 2020b).

Tovey (no date) suggests that the wonder and mystery in a natural outdoor space such as the one shown in the photograph, not only allows space and freedom for experimentation, exploration and investigation but also risky play, adventure and challenge. Early Years Outdoors Education (no date) defines risky play as play that is challenging, testing boundaries and limitations with the risk of injury present. Lavrysen (2017) suggests children seek out risky play naturally, putting emphasis on both the environment and adult in supporting children to develop competence when considering risk. However, Murray and Williams (2019) suggest a challenge to children accessing purposeful risky play is adult attitudes, continuing that adults viewing outdoor play as high risk creates a culture whereby children become more risk averse and less likely to participate in this form of play. In addition, Ihmeidah and Al-Qaryouti (2016) suggest adults typically engage less in outdoor play interactions due to taking on a more supervisory, behaviour management role of children's play in what are deemed high-risk environments, which in turn extinguishes children's freedom and creativity. Furthermore, Little (2013) agrees suggesting that adults, particularly females, have difficulty finding a balance between the desire to keep children free from harm and providing opportunities for risky play that are beneficial for children. Jolleyman, *et al.* (2019) acknowledges the challenges and impact of adult's attitudes towards risky play, suggesting that a key factor in reducing a number of

barriers is upskilling and building confidence within adults to support children to engage in this form of play. Harper and Obee (2021) suggest society views Forest Schools as a more acceptable way to offer children risky outdoor play opportunities. Forest School Training (FSTC) (no date) suggests that forest schools enhance children's resilience, wellbeing, communication, problem solving skills and learning capacity continuing that much of a child's learning within a forest school environment is a result of children testing individual abilities in a real life context. Barrett (no date) suggests adults trusting children to engage in risky play and learn from mistakes enables children to become empowered individuals. Sneek *et al.* (2019) agree suggesting inactivity in early years is linked to reduced cognitive ability in children, continuing that physical activity enhances the development of executive brain functions that are directly correlated with mathematical attainment. Furthermore, Keith (2018) suggests that meaningful engagement in active learning affords children the opportunity to deepen thinking and heighten mathematical motivation. In addition, Ouvry and Furtado (2020) suggest that, within outdoor environments, children consolidate learning through the most natural channel of movement allowing children to actively experience the world through all senses. White (2016) agrees suggesting physical play and movement supports children to master small and large scale movement skills, explore and manipulate materials and to negotiate surroundings comfortably. In addition, White (2016) continues that through physical play children experience and begin to understand the world through the sensory system. As suggested by The Motor Story (no date), physical play provides opportunities for the proprioceptive and vestibular senses to be ignited and developed through activities such as climbing, spinning, swinging and jumping. The Motor Story (no date) continues that children are more able to engage and attend during activities as well as having a sense of the body in space when these senses are used. Furthermore, Little and Eager (2010) argue that risky play enables individual discovery of what a child's body is capable of with holistic development and play quality being enhanced when children are supported by adults to take risks, explore surroundings and experiment

Tovey (2020) considers a Froebelian Approach whereby teacher-led education is rejected and children are viewed as curious, active and creative therefore play, similarly to Piaget's theory, is considered the best form of learning. However, in contrast to Piaget's theory, Tovey (2020) suggests that children need to build emotionally secure attachments with supportive and nurturing adults to thrive, continuing that the adult role is to sensitively support children to problem solve, make choices and pursue individual interests and talents in a mutually respectful and purposeful way, known as freedom with guidance. Bruce (2020) highlights that freedom with guidance is a challenging and delicate balance to strike, suggesting adults must not invade or overwhelm children and the endless possibilities afforded through free flowing play. In addition, White (no date) also emphasises the importance of the role of the adult within outdoor play, stating that the full potential of the outdoors being available and accessible to children centres on knowledgeable and enthusiastic adults being a resource, as well as Tovey (no date) suggesting outdoor play provides meaningful learning opportunities across all areas of the curriculum including mathematics and science. However, Tinney *et al.* (2020) argue that accessibility to appropriate training programmes for adults is essential in building confidence to support children's learning particularly regarding scientific concepts.

Barrett (no date) suggests adults should observe children's play to understand individual developmental needs, waiting for opportunities and ques to enter into play to appropriately scaffold for children. Bruner's Theory of Scaffolding (1976) suggests children need active adult support when learning new concepts, with this adult support initially being depended upon until such a time whereby the child has developed knowledge and acquired skills meaning adult support can be reduced (Wheeler, no date). McLeod (2019) agrees suggesting the role of the adult is to facilitate children's thinking and problem-solving skills that are transferrable across varied situations. Furthermore, McLeod (2019) states that, in contrast to Piaget's Stages of Development, Bruner's Modes of Representation for learning are integrated as opposed to sequential, therefore children's learning is not hindered by adults deeming a concept too complex to learn merely based on a child's age. In high affordance outdoor environments as shown in the photograph in Section

One, adults are able to scaffold children's learning appropriately to support learning of mathematical and scientific concepts. Bottrill (2018) and Tucker (2014) argue that in order to apply mathematical understanding, children need to experience such concepts through the vehicle of play, therefore adults are able to re-visit and build upon children's learning in a high affordance outdoor environment to best support this skill acquisition known as the Spiral Curriculum. Bruner developed the Spiral Curriculum theory whereby children are introduced to concepts that are re-visited throughout a period of learning. The complexity of the concept increases at each re-visit to enable children to relate new and old learning; therefore, new information is put into context with ease (Education Partnerships Incorporated (EPI), no date). Ireland and Mouthaan (2020) agree suggesting the logical sequencing and reinforcement enables children to retain and use the information more effectively. In addition, as suggested by Siraj-Blatchford and Asani (2015), the environment shown in Section One enables adults to begin a dialogue to engage children to support mathematical and scientific learning by using metacognitive talk and questioning. Furthermore, Siraj-Blathford (2009) argues that the adult role within Sustained Shared Thinking supports learning through meaningful, high quality play interactions with the use of open-ended questioning that invokes curiosity and supports exploration, experimentation and problem-solving skills. Siraj-Blatchford (2009) continues that this type of interaction between adult and children, engages children in activities for longer periods of time, which in turn enhances the learning experience and provides further tools for children to re-visit and reinforce learning independently.

It is evident, as suggested by White (no date), that the role of the adult in supporting children's scientific and mathematical learning outdoors is varied as adults need to ensure outdoor provision is stimulating and organised in such a way that children are empowered to explore and learn through play independently.

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