2012048
EAEE4005/EAEE4010
Word count: 3000

The young mathematician : exploration and problem solving

EAEE4005 / EAEE4010

2012048
EAEE4005/EAEE4010
Word count: 3000

Contents page

	Page
Activity plan	3
Evaluation	5
Discussion	8
Explanation	10
References	12

2012048
EAEE4005/EAEE4010
Word count: 3000

Section one - Activity plan

Activity Plan		
Activity: Concept of numbers		
Learning intention: shows an interest in numbers in the environment		
Number of children: four	Age of children: three year olds	Number of adults: one
Location: woodland area of the school	Preparation time: five minutes	Activity time: thirty minutes
Resources: • numbers one to ten • Four buckets, one each for the children • camera • coats		
Aim/s of activity: The aim is for children to understand a number line understand that numbers have meaning		
Links to outcomes: • understanding 'one more' and 'one less'. Demonstrate the importance of numbers in play. • To understand that numbers have meaning		
Differentiation: • Children could be supported by providing them with a number line. • Challenge the children by asking them if they can think of a bigger or smaller number to the one that they have found		

Health and safety: • consider the weather, is it raining or cold will coats be needed? • This activity involves going into the woodland area of the grounds ensure you have read and understood the risk assessment for the area.
Role of adult/adults: • Before the activity numbers must be hidden out in the woodland area. • Explain to the children that they are going on a hunt to find the lost numbers out in the woods and they need to gather the numbers they find and put them in their buckets. • With the camera take photos of the children during the activity. • keep the children interested, ask them questions. • praise the children.
The activity: • This activity is to help children understand the meaning of numbers, numbers will be hidden in the woodland area of the school for the children to go on a treasure hunt to find them. Each child in the group will be given a bucket for their found numbers to go in. Once all of the numbers are found the children then return to the yard where they are to put the numbers in sequence from one through to ten, once this is done the children can then go on another treasure hunt to find things in the woodland area such as leaves, nuts, pine cones, sticks, and stones that equal up to the numbers on the ground, for example at the number three there could be three sticks and four stones at the number four and so on.

Section two - Evaluation

Having evaluated the activity plan it has been identified that there are strengths and weaknesses within the plan, one simple change to enhance the plan would be adding a date and time the activity would be done or include the time and date after the activity is completed. Adding a time and date can make things easier when filing a document making it easy to relocate it at a later date, for instance during an inspection when being asked to provide evidence of activity planning or the activity itself. Care Inspectorate Wales, Estyn, Flying start are just a few that may require evidence of activity planning. (early years staffroom, 2021)

Although the activity plan is clearly presented and easy to read because the activity plan is divided into sections, the sections appear to have limited information. The activity plan should consider children with additional learning needs, these needs could be physical or learning needs and should be included in the plan. Eclre.org states that inclusion is for all children and that not all children have the same disability or learning needs and may not need the same adaption's to the activity, therefore it would be better to add the children's names to the plan for the practitioners to keep track of their progress and this activity plan could feed the next to track development. The activity plan states that there will be four children doing the activity and that they will be joined by one member of staff, according to CIW (care inspectorate Wales, 2021) this staff to children ratio is correct, however a child with additional learning needs may require additional support therefore another adult would be needed.

To continue the evaluation of the activity plan and what could be amended to enhance it, children with additional learning needs should be considered throughout the plan. The United Nations Convention on the Rights of the Child (UNCRC), says that every child has rights regardless of their ethnicity, language, abilities or gender. (Unicef Uk. 2021). The UNCRC is made up of forty five articles for the rights of the children. Article twenty three states that children with a disability have the right to a full life, independence and a right to be part of a community this making it essential that they are added to the planning of activities. In addition to adding children to the activity plan, the activity itself needs to accommodate children of all abilities. Froebel, who created the first kindergarten where children of all abilities could learn and develop at their own pace indoors or outdoors argues that all children

learn best through play and talk, therefore including all children could only have advantages regardless of their speed of development. (Tovey, 2013).

The activity itself is based in the woodland area of the school grounds and does not say whether it is easily accessible for children with mobility issues, the activity plan also does not give clear instruction for the practitioner to hide the numbers at an accessible height for all the children in the activity to be able to reach them and to feel actively involved with the activity. The National Day Nursery Association claims that inclusion is vital to improve children's out comes and that it closes the gap between disadvantaged children and those more able. The NDNA also refers to the UNCRC and how children in the United Kingdom have rights and legislations. (NDNA, 2021).

The activity plan touches on the role of the adult giving a brief understanding of what is needed. this section could be larger giving more in depth instruction. The role adults have in children's learning and development is an important one. (early years matters, 2021). Explaining to the children and having them understanding what is going to happen is a strength that the plan has, however the plan could go into more detail giving the adult more instruction. Bullet points could be added with prompts such as, 'ask the children if they have seen numbers outside of the class room'. Instruction on closing the activity could also be added to enhance the plan such as, 'once the activity has been completed, print out the photos and at circle time help the children do a show and tell and ask them questions, what did you do? where did you go? what was the first number found? what was your favorite part? doing this will give the children a sense of achievement, build their confidence and develop their ability to recall.

Risk assessments are a legal requirement of early years settings, these assessments identify risks and hazards and how to minimize risk. (assets publishing, 20210). The activity plan does state that the risk assessments should be read and understood, however this is an outdoor activity and the elements may change the risk, for example there may have been a downpour of rain the day before the activity leaving the ground soaked and slippery this can impact the initial risk assessment. Adding 'walk through the area prior to the activity to identify new risk' would make the activity safer and less disappointing for the children if they got to the woodland area to discover it was unusable.

Evaluating the resources written in the activity plan it is clear to see what resources are needed from the classroom, however the plan could have bullet points of the natural resources to prompt the staff members. Resources such as leaves, sticks, stones, pine cones and things alike can all be found in the environment and used. Although these are not always present in the classroom they could be discussed with the children and images shown prior to the activity so the children will also have prompts and a basic understanding of what they are looking for. The surroundings of the children is rich with resources and searching for these natural materials will have a positive effect on the children's physical and mental health compared to having resources handed to them to do the activity in the classroom. (mind.org, 2021).

Vygotsky believed that a community plays a huge part of children's development and that learning in the community or the natural environment helps the children make meaning to their learning with an adults input. Unlike Vygotsky, Piaget believed that children will learn and develop independently through their own explorations and will need to complete one stage of development before progressing on to the next stage. Both Vygotsky and Piaget believe that children are curious and that they are actively involved with their learning. (Simply psychology, 2021). Linking Vygotsky, Piaget and their theory of children being actively curious in their learning makes the activity itself fun and feeds the children's curiosity towards learning thus getting the best possible outcomes for the children involved.

Section three - Discussion

This section of the portfolio will discuss resources and how they could be used to develop children's mathematical skills. The foundation phase framework is a statuary curriculum in Wales, the framework encourages children to be creative and learn through their play. Along with many other aims, the foundation phase encourages children to play and to have access to a wide range of education. (Hwb.Gov.Uk. 2021).

Tucker (2016, p13) describes that resources such as conkers, pine cones and other resources that are from natural material can be crossed used and children have the opportunity to become more creative whilst using them. Loose parts play is one of many ways that objects can be used in play, these objects can be a great way to develop mathematical skills as they can be stacked, lined up and counted. Loose parts play does not have to come from natural resources but can be any object that is easily moved around. (Early years resources. 2021). Hansen and Vaukins say that adults believe mathematics is something that is done and cannot see that it is something they do in everyday life and are unaware that they are using math. (Googlebooks.2021). Ofsted agree with Hansen and Vaukins and say that mathematics underpins our lives on a daily basis. (gov.uk. 2011) therefore if done correctly at the early years stage it can have positive effects with mathematics in later life.

Froebel was a great influence on Margaret McMillans theory that children learned best outdoors in a free flow environment. McMillan believed that children did not need toys indoors for them to develop and that an outdoor area filled with pots and pans, stones, sticks and other loose parts would keep the interest of children longer to achieve the best possible outcome. (early years foundation stage forum. 2021). In today's practice loose parts can be seen in almost all early years settings, as previously discussed loose parts does not necessarily mean that they are objects from natural resources but can be anything that is easily moved around and come with no set of instructions on how to use them. Loose parts have unlimited ways in which they can be used making learning exciting and engaging the children's imagination making play free and easy. Although games and toys like 'lotto', puzzles and train tracks are fun they have only one purpose and once completed the child's interest will be lost. As loose parts play can involve a wide range of resources they can be found almost anywhere not only is it fun and exciting and can turn a pebble into a person or a stick into a fishing rod it is also a great cost effective way to gain resources in settings.

In Wales there are four purposes of the curriculum to enable children to achieve and become ambitious, capable learners, healthy and confident individuals, enterprising, creative contributors and ethical, informed citizens (gov.wales. 2021) allowing children to have an holistic approach to their education. Loose parts play benefits all areas of learning for children, personal, social and emotional development by allowing children to be free in how they construct with loose parts thus developing independence. Talking and listening to children whilst they are immersed in loose parts play gives the opportunity to open discussions about shape, colour, size and so on, it is also a great opportunity for children to learn new words, these are all contributors to their development in communication and language. Loose parts come in all sizes making them a good option for children to develop their fine motor skills such as threading cotton wheels onto string to make a necklace, it also builds on their gross motor skills for example moving slices of logs and using them as stepping stones to cross a river in their imaginative play adding to their physical development. Referring back to the activity plan in section one, the chosen activity is mathematical and the children are to find objects to coincide with the numbers they find. Choosing to do this activity outside allows children to use and develop their mathematical skills by sorting, matching and counting the loose parts they find. Developing the children's understanding of the world through loose parts teaches them about materials and where they come from and that materials can be recycled and used again as something different. (gov.wales. 2021).

Froebel and McMillan believed that allowing children to be free and encouraging them to use resources they find in the outdoor world would develop their skills, this was not the case for Montessori. Montessori believed that natural materials were not educational and did not allow children to play with loose parts. Children that attend Montessori schools do not play with loose parts and have specially designed materials instead. Materials used in Montessori schools have only one use, they believe this allows the children to recognise their errors and that this is the best way for children to learn that making errors is a part of growth and development. (FAMM. 2021).

Section four - Explanation

Section one of the portfolio briefly touched upon the role of the adult in the activity plan, this section of the portfolio will discuss the role of the adult in more depth. Referring back to the role of the adult section in the activity plan there is very little information for the adult to understand their role. Before children can start doing some activities they will need to be thought of and planned, this is the beginning of the role of the adult during activities. The adult will need to consider all of the children when they plan and should treat each child as an individual. In this instance the activity is a mathematical one, not all children develop at the same pace and will be at different developmental stages. It is the responsibility of the adult to ensure the activity supports all children in their learning. (Foundation years. 2021). Planning is done to meet the developmental needs of all of the children, there are many approaches to planning the main being, long term, medium term, and short term planning. planning allows the children to have a variety of activities throughout all areas of learning. it is important for adults to understand how children develop. (earlyyears.wales. 2021). During activities the children will be unknowingly observed, this could be done through the adult recording the activity or by writing notes down. Observations done whilst the children are free and engaged can give a true reflection on the child's developmental stage.

The foundation phase compact profile is used to monitor the children's development through observations and assessments. The role of the adult is to observe children in their play and activities and track their development, this information is then fed in to the compact profile and the outcome for each child is clear. The compact profile is then used for the adult to plan the next steps for the child according to their development level. (gov.wales. 2021).

According to Vygotsky and Bruner both believed that children learn best from their peers and adults. Bruner believed that children need adult support when learning new skills, Bruners scaffolding approach meant that adults were a facilitator and need to demonstrate new skills and once those skills were mastered then the adult support was no longer needed. (envision your evolution. 2021). Unlike Vygotsky and Bruner who believed that adults play an important role in children's development, Reggio Emilia believed otherwise. Reggio Emilia believed that child led play was important and children should be encouraged to direct their own play leaving little to no room for adults direction. (very well family. 2021).

The role of the adult is to ensure the children are safe and secure. Adults do play an important role in children's development however it is important to have the right balance of engagement. Taking the Vygotsky approach and scaffolding children's development leading activities can help build a relationship with the children, however it is also important not to take over their play by becoming intrusive. Adults who enter children's play uninvited can have a negative effect and the children may stop the play they were engrossed in and move onto another play where there are no adults. Adults involvement in play is not always negative. Adults can support play without taking over and controlling it. Adults who are invited into the child's play and take an active interest and show the child that what they are doing is important will have a positive effect and builds on the child's self esteem, making them feel valued and a self of belonging. (seriously kids. 2021)

2012048
EAEE4005/EAEE4010
Word count: 3000

Reference list