

Student number: 1807809

Y mathemategydd ifanc: archwilio a datrys problemau/ The Young Mathematician:
Exploration and Problem Solving (EAEE40010/C)

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Section 1 - An activity plan for promoting young children's mathematical concepts and numeracy skills:

Cynllun Gweithgaredd - Activity Plan		
<u>Gweithgareddau:</u> <u>Activity: Counting with finger print painting - Finger painting caterpillars, butterflies, flowers, lady bugs and other nature related objects.</u>		
Nifer o blant: <i>Number of children: 4</i>	Oed y plant: <i>Age of children: 3 years old</i>	Nifer o oedolion: <i>Number of adults: 1</i>
Lleoliad: <i>Location: Arts and craft area (Indoors) Nursery</i>	Amser paratoi: <i>Preparation time: 15 minutes</i>	Amser gweithgareddau: <i>Activity time: Half an hour</i>
<u>Resources:</u> • <i>Green paint</i> • <i>Black paint</i> • <i>Purple paint</i> • <i>Pink paint</i> • <i>Prepared worksheet</i> • <i>Paint Brushes</i> • <i>Water</i> • <i>Aprons</i>		

Amcan/ion y gweithgareddau:

Aim/s of activity:

The aims of the activity is support children's counting and numeracy skills and getting them prepared in numeracy skills for full time education. The children are able to have fun with learning to count and recognise different number patterns and recognising colours. it will support a child's fine motor skills and focusing on the process of the activity. This is also a very social activity working with other children and adults. Learning to count with others, supporting each other in learning how to count in a higher level. following instructions of the mathematical question ask, whether it asks for 2 finger prints or 5 finger prints will children be able to understand how many marking they need to make to get the correct number.

Cysylltiadau â deilliannau:

Links to outcomes:

"Select appropriate equipment and resources" (Welsh Government, 2015: 29)

"Transfer mathematical skills to play and classroom activities" (Welsh Government, 2015: 29)

"Use mark making to represent numbers in play activities that can be interpreted and explained " (Welsh Government,2015: 30)

"Count reliably up to 5 objects" (Welsh Government, 2015: 30)

"Use mark making to begin to record collections" (Welsh Government, 2015: 35)

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Gwahaniaethu:

Differentiation:

Ensuring all children are included in the task and that everyone is able to take part. It suits all children and is age appropriate for the children.

Iechyd a diogelwch:

Health and safety:

- *A risk assessment is taken before hand so that the adult can ensure that the environment is safe for the task to take place in.*
- *Ensuring all the equipment for the activity is safe and we are able to use in such activity.*
- *Ensuring there is adult supervision when task takes place.*

Rôl yr oedolyn/oedolion:

Role of adult/adults:

- *To monitor and support the children throughout the activity.*
- *Ensuring children have the independence to do the task without adult intervention.*

Y gweithgareddau:

The activity:

This activity is a fun filled counting experience. Children are able to do their favourite thing and that is using play even better messy play to learn new things. Maths is a difficult subject for young children to learn so by making it a fun activity including paint and their hands and fingers they are creating something themselves. They can learn how many spots a ladybug has or how

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many petals are on a flower so as well as learning mathematical skills we are incorporating social skills, learning about nature and animals. This activity will draw children in as they are able to learn a variety of skills.

Children will have a plain worksheet to work from where the children will have to build the animal or plant with their fingers and paint. Learn to count when building the animal or plant. They will have an option of colours and be able to build the object. They learn how to count to 5, 10 even 15 by using play. they will also learn how to see a number and know how many marks to make. The children are able to incorporate play into a fun filled mathematical activity helping the children learn to count and differences of numbers and be able to challenge children in a different environment to work in. (Bruner, 1991)

As Reggio Emilia approach discusses i've ensured that my activity includes Child-Led approach so the children have the independence to do the activity and the adult steps back and monitors from a far and only interine when needed. I've ensured that my staff member will be able to listen to the children and be able to discover the different interests they have. Providing the young children with a variety of ways to support these interests, different animals and plants they have an interest in. (Bear Park, The Reggio Emilia Approach To Early Childhood Education: An Overview: 2015).

Section 2- An evaluation of the activity plan with links to theory and research:

The aim of this evaluation is to find the weaknesses and strengths presented throughout the activity plan. What could have improved the plan? What needed more information and explanation? Throughout the evaluation there will be sections that look at the Gibbs reflective cycle to see what improvements could have been made to the activity plan. According to Gibbs (1988) he has a variety of sections he looks at to be able to evaluate a situation, he looks at evaluation on what was positive and what was negative about the plan activity? What went well? Also what did not go so well? The University of Edinburgh (2018).

Whilst evaluating the plan a variety of strengths were presented in the planned activity. Once put together it was ensured that the activity incorporated active learning and ensured it was a practical activity as children respond well to a more practical learning style which according to Piaget (1958) supports active learning and children develop from having first hand experiences it helps motivate children. Tucker (2014. Pg 2)

The importance of mathematical development and numeracy skills and how having children take part in a group practical activity is emphasised in the plan and according to Vygotsky (1978) believes that social interaction with peers and adults the planned activity aim was to help children make sense of the world as they can share their experiences. Tucker (2014. Pg 2) It has been ensured that the plan supports building these skills and will help prepare young children for the appropriate level for starting

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school. Also ensuring the reggio emilia theory is included meaning that the children have child led opportunities.

The aim to incorporate Bruner's theory and how he ensured his theory highlights a interaction with others and how challenging children can support them in the other mathematical development is to help the activity and it ensure that it is supporting a child's mathematical and numeracy development. (Tucker 2014 pg 2)

Although the activity plan is aimed to be more child led for the children. It has been ensured the role of the adult is discussed and explained. As the adult needs to ensure it has some involvement so they can see how the children are progressing and if they are able to do the task at hand this is where the The Early years Foundation Phase Framework , Curriculum for Wales (Revised 2015) as this is what nursery and school follow this curriculum as the role of the adult is that they monitor the child's progress and what strengths and weaknesses were presented after the activity. Whilst also i wanted it have a child led input into the activity but also have the role of the adults input so they are monitor how the children progress through out the activity.

The activity plan ensures that the children can enjoy the activity and have fun doing mathematics. The more fun the children have doing the activity the more the children will want to join in and want to learn. According to Tucker (2014) discussed how Bruce (1991) argues about `free-flow play` it is a similar type of play like child-led play, children are able to freely choose how they want to play it comes natural and it is ensured that there are links to the theorist Bruce (1991) and the welsh government and the foundation phase wales and that the link help challenge the children to reach their goals.

Although the plan has its strengths also is not without its weakness plan. There could of been opportunities to include more opportunities for children with ALN disorders such as

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dyslexia, dyspraxia, Autism, ADHD, Aspergers, Down syndrome and stammers they may find mathematical activities difficult so they may need extra support compared to other children, one to one support could be offered, support for children who struggle may need that extra support to ensure they can take part in the activity.

More explanation could of been applied to the link on Vygotsky (1978) theory in the Planned activity as it emphasizes the social interaction with other children and adults which is what needed to be expanded on to support the evidence in the plan to create that link between Vygotsky and the mathematical activity . As children are able to include a sense of the world and learning from others experiences. Children have curious minds and when it comes to mathematical development working in a social environment it can push children to work harder. Tucker (2014. pg 2)

It's important to find things that can be improved on as there is always something people can improve on although hard work was put in the activity plan its vital that individuals are able to evaluate and detect the improvements needed. The activity plan could of had a wider range of resources and consider different environments for the activity to take place to challenge young children . According to Taylor and Harris (2014) it is believed McMillan (1860-1931) recommended that children have a variety of learning areas to support their development especially the outdoors as children can learn so much from being in the outdoor environment as they are able to learn about the sense of the world around them which support children areas of learning including mathematical development.

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Section 3 - A discussion of the range and diversity of resources and how they are implemented through play:

This will be a discussion about the positives of implementing a larger range of resources that can support a child's mathematical development. Resources do not need to be product bases or commercial mathematical resources. Although setting do use product based materials for supporting children's development but it can be seen that nursery and school setting are now using more natural materials to help implementing a change of environment for young children being able access the outdoor environment being able to use imagination and creativity and implementing outdoor resources from the outdoors such leafs, conkers, acorns, sticks, shells, sand, water, and other resources that could be implemented. Tucker (2014. Pg 13)

Challenging children's counting by creating sensory bottles in an activity and getting children to count how many things included and put into the bottle so children can learn what they are counting and the resources used would be natural resources such as plastic bottles and things from the outdoors. Allowing children to have free access to different areas in the setting and try and implement maths into all the section, such as arts and crafts, reading area, building area, outdoors. Maths should be covered in a

variety of area of a setting as this is cross curricular learning. According to Tucker (2014 pg 4) it is discussed that creativity can be implemented into a child's mathematical development.

There are a variety of reasons a lot of nursery and school settings prefer to use natural materials over plastic as it teaches children a sense of the world around them. Learning outdoors is a very crucial part of a child's development as Tucker (2014 pg 21) discusses how Macmillan, Froebel and Isaacs all support outdoor learning and uses natural materials to implement into a child's education and development. It's all about thinking outside of the box doing new things for a children's educational development including a variety of equipment and different objects that will help develop their mathematical skills through play. Including play is very important for children as incorporating play into mathematical thinking it supports how children use their problem solving skills.

In a nursery or school setting, it is seen to be that they have specific areas for different areas of development, but maths can be included in a variety of areas. Role play area can be a shop where children have to learn how to count money, sorting money and counting objects. Children learn these things through role play. Arts and craft area has Maths implemented into it as things are labelled to develop mathematical development. Building area, learning how to build a tower counting how many blocks a child can put on a tower.

Mathematical learning is all around the settings. Tucker (2014) discusses what Smilansky and shefatya (1990) feel play should be a big part of a child's development and having mathematical learning in a variety of areas of learning in a nursery or school setting. Incorporating children's maths into everyday activities throughout the nursery or school environment helps children learn about different areas of maths in a fun way or

there not only learning one skill they are learning a variety of skills from the foundation phase (Revised 2015) they are able to reach different goals that will support their mathematical learning. Children should be able to have the opportunity to learn more about maths through play. Smilansky and Shefatya (1990).

Section 4 - An explanation as to how the adult monitors and plans for children's mathematical development with links to current curriculum frameworks (e.g Numeracy and play framework).

In Wales it follows the early years foundation phase (Revised 2015) when it comes down to monitoring and planning a child's mathematical development. The foundation phase ensures that adults follow this when creating activities that are going help a child reach the potential and meet the skills set out in the early years foundation phase is in place to help children reach those goals. The role of the adult is very important when planning as it is the adult that is observing the children, the adult will be able to determine what the child's strengths and weaknesses are but it depends on what the child has an interest in and including the needs of a child, not every child is the same.

The adult should be following the the early years framework foundation phase (Revised 2015) which is where adults are required to plan around the foundation phase framework - curriculum for Wales (Revised 2015) they must first montoir the child find strengths and weakness and see what abilities the children have and be able to plan suitable observations to help children reach higher goals each time a different

observation takes place which will monitor different learning areas but also pull mathematical development into the tasks to see if a child is capable of doing more and reaching the skills the framework requires for their age or if they need extra support to help the child reach the goal in place.

The early years foundation phase (2015) supports how the adult is able to highlight areas of a children's learning development. What strengths children already possess and what observation need need to take place to identify what weaknesses they have and what the adult needs monitor to help improve as this is where the EYFP comes into it as they able identify a plan to be able to support a child's future with their mathematical development.

As according to Foundation Phase Framework (Revised 2015) it is all about the identifying the weaknesses of a child numeracy skills so a early intervention can take place, this is where an adult is able to identify, monitor the situation and has the opportunity to evaluate and the adult is able see how the framework has an effect on a child's education, this is why the role of the adult needs to be correctly applied. The Foundation Phase Wales framework (Revised 2015) is important to a child's learning and development.

Adults who have the role in schools also have another way of monitoring and setting plans for children education as children between the ages of 5-14 all have to take part in The National Literacy and Numeracy framework (2014) which is where children take a test to see where they are at with both literacy and numeracy so it allows the adult to monitor the children's progress and be able to report on the progress the children are making . doing this test regularly the child is able to develop their skills on areas such as numerical reasoning also number skills and measuring skills which will support how they use their data skills. It also helps them identify what strengths and weaknesses and it

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improve on planning personal support for a child's learning. This is a test that is to be taken annually so that they are able to monitor all children progress over the years in their education and it will help the adult to identify any weaknesses to see if they require any additional support with their numeracy.

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