# A critical analysis of the relationship between teacher subject knowledge and effective learning and teaching in the primary school

## Introduction

Teachers subject knowledge is seen as one of the most vital influences towards pupil's achievement, however many would argue that teacher subject knowledge is a small part of many other contributions that all link together in creating powerful pedagogy. This essay will outline a brief description of the setting I attended on Professional Teaching Experience (PTE1), however pupil's details and the setting will remain anonymous due to ethical guidelines and confidentiality. A literature review will be included to discuss, evaluate and analyse the arguments on teacher subject knowledge and it's affects on pupils learning and achievement. The key findings of the analysis will be used in connection to my own experience of teaching throughout PTE1. I will refer to the Knowledge Quartet and Shulman (1987) theory on subject knowledge and how they correlate with the literature and the reflection of my own experience during PTE1.

PTE1 took place in a small rural village of a Welsh county. Over the past 7 weeks I have been based in a Year 2 classroom, made up of 18 pupils, one of which is supported by a one-to-one assistant. The class included 11 boys and 7 girls. Current school data evidenced that approximately 18% of pupils received free school meals, which is below the national average. The majority of pupils within the setting are of White, Welsh background with very few being ethnic minority. However, no pupils are from a Welsh first language homelife and background (Estyn, 2015). During PTE1 I have taught numerous sessions over various areas of the curriculum which will be analysed during the reflection of the following text.

## Literature Review

Primary school teachers have many roles and responsibilities, one of which is to the pupils in the classroom, ensuring that they follow the criteria of Pupil Protection and Every Child Matter's (McGrane, 2010). It is the responsibility of the primary teacher to monitor and assess all student's progress and development, and subsequently inform the parents / carers of their child's educational progress. This form of teaching correlates to the theory of Bruner, known as scaffolding. The scaffolding is a form of

teaching where the teacher educates and support pupils with their learning that will later develop their skills, enabling them to succeed and achieve their full potential (Lindon, 2010).

Primary teacher's also play a significant role in the social and intellectual growth of children, recognising the importance of planning and delivering lessons that meet the needs of all children as well as implementing strategies for those who require extra tuitional help (Hattie, 2012). It is vital that the area's and requirements of the curriculum are implemented into the daily teaching of lessons, most importantly the delivery of Literacy and Numeracy lessons (Hattie, 2009).

Over many decades, one of the key elements to becoming a worthy teacher is having excellent subject knowledge as this influences teaching and learning and pupil's achievement. However, many studies have been conducted examining the effects of teacher subject knowledge and it's influence on pupil achievements, which resulted in a failure to produce consistent findings (Darling-Hammond, 2012). Many would argue that whilst teacher subject knowledge is an important aspect of teaching, the picture is much more complex, as being an effective teacher involves many other factors and contributions (Bearne and Reedy, 2017). Some of the factors that contribute towards creating and manifesting an effective learning environment include; behaviour management, content knowledge, professional behaviours and teacher beliefs. According to Coe et al., (2014) teachers who can demonstrate their ability to utilise each of these attributes daily will encourage good quality teaching.

In contrast to these standpoints, Shulman (1987) argues that a teacher's ability to plan and deliver effective lessons, more specifically in literacy and numeracy, and the ability to respond perceptively to the multitude of challenges that are often faced by children during these sessions, is influenced by the teacher's knowledge and understanding of the learning and the power of pedagogical skills in the field of learning. This links to the contingency element of the 'Knowledge Quartet', which suggests that teachers should be able to respond to classroom events that are unplanned (Shulman, 1987).

The Knowledge Quartet is a framework designed to observe, analyse and develop the subject knowledge and teaching of Mathematics. As opposed to considering the basic structures of lessons, such as, behaviour management and organisation within the classroom, the Knowledge Quartet, classifies learning events during Math sessions

that are closely linked to the subject matter. This is categorised into four dimensions: Foundation, Transformation, Connection and Contingency (Pang and Yung, 2013). The foundation element focuses on teacher's beliefs and values of subject knowledge and how these beliefs influences pedagogical choices in a fundamental way. The transformation dimension emphasises the knowledge in action through effective planning and delivery of lessons. This element has been supported by Shulman (1987) who suggests that during the stage of transformation children begin to learn about subjects through explanations, analogies and examples during the delivery of the lesson. The third dimension 'connection' highlights the importance of sequencing lessons and the coherence of planning and delivering lessons of a subject that links together the decisions and choices of all aspects of the subject knowledge (Rowland, *et al*., 2009). Lastly, the contingency element focuses on the learning events that occur unexpectedly, that are impossible to plan for during sessions, where teachers are required to 'think on their feet' and respond effectively to children's ideas and techniques that are used to make sense of their learning (Williams, 2003).

Despite the Knowledge Quartet being designed and implemented to focus on Mathematical lessons, it can also be used in relation to all other areas of learning. Shulman (1986) published an article on the knowledge base of teaching which emphasises that being an effective teacher is more than having subject knowledge, it highlights key areas that each contribute to pupil achievement and effective teaching. (Glazzard, 2016). Some of the key areas suggested by Shulman include: content knowledge, pedagogical knowledge, knowledge of pupil's characteristics, knowledge of educational context and aims and curriculum knowledge (Kleickmann, et al., 2012). Shulman accentuates the importance of all teachers obtaining a sufficient amount of knowledge in each category in order to become a worthy teacher (Pojman, 2010). Likewise, the Foundation Phase framework for Wales (2015) highlights the many factors that contributes to effective learning and teaching in the primary classroom aside from subject knowledge. This includes the need for practitioners to understand the importance of planning and developing appropriate lessons in Maths, Literacy and other areas of learning across the curriculum that will enable children to develop into confident learners (Wales. Department for Education and Skills, 2015).

The frameworks suggest that practitioners are encouraged to differentiate a broad and balanced education through varied lessons, activities, demonstrations and analogies.

This view outlined by the Foundation Phase Framework links closely to the transformation dimension of the Knowledge Quartet as well as Shulmans observation that through the transformation teacher's knowledge base is distinguished by the dimension of the practitioner and the ability to transform the content knowledge into methods that are pedagogically powerful (Williams, 2003). Moreover, it is vital that practitioners require subject knowledge and pedagogical knowledge, such as, an awareness of the common challenges and difficulties faced by teachers and ways of dealing with them. It is also important to forge connections between various educational ideas and the alternative ways that would solve the challenges (Pollard, 2008). Cotton (2016) would argue that the most effective teacher has an in-depth knowledge and understanding of the content and subjects they teach and when their subject knowledge does not meet a certain level it will significantly influence pupils learning and achievement.

According to a study conducted by Metzler and Woessmann (2010) on the correlation between teacher subject knowledge and pupil achievement, a teacher with high subject knowledge and understanding increases pupil's achievement by 16.6% and therefore teacher subject knowledge is a vital factor and contributes significantly to the overall teacher qualities. In a report written by the Sutton Trust (2014) being an effective teacher is more than having deep knowledge about a subject, it is the ability to use and transfer the knowledge through pedagogical approaches to learning. The report proposes that the connection between teacher academic performance and pupil performance have little or no correlation (Brooks, 2016). However, the report suggests that there is a relationship between teacher subject knowledge and pupil achievement, but the correlation is not a simple linear relationship. According to Sadler (2011) the relationship between teachers understanding and the pupils 'gains' is positive yet uncertain, he highlights that research evidenced by Hill *et al*. (2005) cited in Warren and Miller (2016) suggests more consistent findings on teachers understanding of pedagogical concepts and subject content knowledge in Mathematics proposes a positive correlation between subject knowledge and student achievement.

Nevertheless, this proposal has been defined by the Sutton Trust (2014) as having a negative and inconsistent relationship (Brooks, 2016). In contrast to these findings, according to a study published by Monk (1944) cited in Kaplan and Owings (2002) there is a need for teachers to have a specific amount of subject knowledge to deliver

effective teaching in the primary classroom. In relation to the above findings, most research and studies undertaken identify a small correlation between teacher subject knowledge and its effects on pupil achievement and more of an impact on what teachers do with their knowledge. Both Askew *et al*. (1997) cited in Ellis (2009) and Timperley (2007) suggest that the belief system of subjects has more of an impact than the depth of knowledge, linking to the foundation element of the Knowledge Quartet.

Despite the knowledge quartet and many researchers suggesting that pedagogical concept is vital in providing an effective teaching practise, many teachers would argue that their values and beliefs towards specific subjects varies due to the ongoing change to the Welsh curriculum. Teacher's confidence in subjects are at risk of decreasing as they are unfamiliar with the new areas of the curriculum that have been implemented by Donaldson in the Successful Future Framework. According to a report published by OFSTED (2002) many teachers displayed low levels of confidence in Digital Competence subject knowledge which led to the staff having a negative impact on improving children's learning and applying a consistent learning environment. These findings illustrate that having low subject knowledge can impact the pedagogical approaches and decisions implemented by the teacher leading to the pupils not reaching their full potential and developing low self-esteem and confidence in the subject. However, 80% of teachers revealed that their levels of confidence in teaching Digital Competence was high displaying effective ICT lessons that implemented cross-curricular learning (OFSTED, 2002).

A case study of these teachers highlighted that children designed a website as part of their Digital Competence subject, where they included Literacy aspects as well as extended their knowledge of technology. The outcome of the learning evidenced that children's progress and standards of understanding during the lesson were increased in both ICT and Literacy, where they extended their confidence and their capabilities. During the lesson, the pupils were asked to deliver a power-point on their website to discuss what they had been learning. Throughout the power-point pupils included a question and answer quiz with their audience, making the learning meaningful. The pupils were asked to explain what they had learnt throughout the session and evaluate their work with their peers. (OFSTED, 2002). This implemented an assessment strategy that enhanced their learning and ensured children achieved well in their

learning. These findings were a result of the teacher's subject knowledge and pedagogical content understanding, as the practitioner planned and taught an effective lesson using all aspects of knowledge in ensuring that the teaching strategies were effective, and children understood their learning (Aubrey, 2013).

Each factor of the lesson links closely to the aspects of the Knowledge Quartet, such as the 'contingency' stage, as the practitioner encouraged children to make sense of their learning. Likewise, it includes aspects of the 'transformation' and 'foundation' aspects as the practitioner transferred their knowledge and understanding into forms that were pedagogically powerful (Turner, 2012). The teacher recognised the importance of the subject and the pedagogical approaches that would be beneficial in teaching the knowledge to the pupils (Aubrey, 2013). The study identifies that there are close links to teacher subject knowledge and pupil achievement, however it highlights the significance of the teacher implementing many teaching strategies and techniques that are effective and encourage children to understand their learning (Jackson, 2015). Therefore, these outcomes correspond with the findings of the above studies as well as the theory of Shulman (1987) and the Knowledge Quartet on the effects of teacher subject knowledge and other factors that influence pupil's achievement and learning (Kleickmann, et al., 2012).

**Reflection**

Prior to beginning PTE1 I was feeling confident in teaching specific subjects such as Welsh, as I attended a Welsh medium school as a child. This led to me having a clear knowledge and understanding of the language. However, on arrival it became apparent that welsh was not a strong subject being taught at the setting and the teachers were not confident with the teaching of welsh lessons. Therefore, it was made clear that the subject would not be one that I would be focusing on, despite being fluent in the language, as the staff and pupils would not be able to continue with the lessons at the same level once I had left placement. Instead, I was asked to take on the responsibility of teaching Literacy, Maths and Science as the main areas of learning. Because of this I had mixed feelings and was unsure whether my confidence in subject knowledge would influence my teaching.

During PTE1 I was asked to cover the planning and delivery of lessons for science and maths over the placement period. Initially I was aware that the depth of my subject

knowledge in science was poor, and my confidence was not at a level that would enable me to deliver the sessions effectively. The half term topic was ‘Mexico’, and therefore I decided to plan science lessons on things that were ‘alive’, ‘dead’ and ‘never been alive’ (See appendix 1) that extended into various other lessons such as our ‘local habitats’, eventually link to Mexican habitats and it’s living animals (See appendix 2). To achieve effective teaching, it was essential to enhance my knowledge prior to planning the lessons. Using my knowledge base of teaching and experience I included various pedagogical approaches that would benefit the children’s learning, making the teaching process of the topic effective and memorable. Pedagogical strategies such as flashcards, power-point and carpet quiz, as well as a welly walk to our local habitat were used during the lessons. Implementation of these teaching strategies reflects with the connection element of the Knowledge Quartet, as I coherently planned and taught a sequence of lessons that made a connection in the learning topics (Kleickmann, et al., 2012).

The teaching strategies that I adopted also linked to the transformation stage of the Knowledge Quartet as I was able to transfer my content knowledge into powerful pedagogical approaches that created effective teaching and learning over many sessions. Firstly, I recognised that having little or no foundation subject knowledge would affect my teaching of science and therefore I understood that there was a need to ensure that my content and pedagogical experiences would need to be adopted to ensure the planning and delivery of sessions were a success. This outcome correlates with the findings of Shulman (1987) who suggests that without the ability to transfer content knowledge and pedagogical skills into teaching, children will not progress and achieve their full potential, due to poor and weak teaching strategies (Kleickmann, et al., 2012). Reflecting on my experience, it was clear that having high levels of subject knowledge was not as vital to the pupil’s achievements and understanding of a topic, in comparison to the pedagogical knowledge base of teaching, as I enhanced my subject knowledge over time but used my pedagogical knowledge from the beginning.

I was asked to teach ‘Maths Mastery’ and mathematical lessons on numerous occasions throughout placement. Similarly, to my views on the science subject, I was not confident in teaching mathematics as I was unfamiliar with English mathematical terminology as I was taught maths through Welsh. This resulted in my confidence in teaching maths being low and required me to study and familiarise myself with basic

math terminology. Despite having low confidence, I understood that maths is an integral part of a child's education and it was important that I planned and delivered effective lessons that would encourage children to enjoy the topic and successfully progress throughout the learning. In relation to the foundation element of the knowledge quartet, teacher's beliefs and values are vital aspects that influence the pedagogical choices during mathematical lessons in a fundamental way (Moore, 2012). Having strong beliefs and values on the importance of mathematics, led to me researching the subject in-depth ensuring that the lessons planned and delivered were effective during the transforming of knowledge and understanding of the subject stage.

During a lesson where pupils were learning to add prices of items up to 50p using money and fruit from the role play area, one pupil recognised that adding the tens and units together to solve the sum, was much easier than the method that I was teaching. The pupil formed this method of calculation on their own accord, helping them to make sense of the learning. In relation to the knowledge quartet's contingency stage, children will often try to make sense of their learning using different techniques and strategies to what is being taught (Pollard, 2008). This was clearly evidenced during the lesson and therefore I recognised that it was important to support the pupil with their strategy as opposed to encouraging them to follow the method I had implemented; linking to my understanding of the constructivist theory of Vygotsky and Piaget who suggests that through active learning, children construct and acquire new knowledge that best suits their needs (Millar and Pound, 2010).

Throughout the math sessions, I created numerous worksheets and resources that linked to the topic, enabling children to gain a sense of enjoyment throughout the learning process. I understood that a hands-on approach to learning is more effective as it makes the lesson enjoyable, resulting in the learning being more memorable for the children. According to Vygotsky, it is vital that lessons consist of various pedagogical methods that will enhance children's cognitive abilities enabling them to acquire new skills and build on their imagination (Tomlinson, 2013).

Having this understanding evidences that my pedagogical knowledge was significant in ensuring that the lessons were delivered effectively, and pupils achieved to their highest potential. In contrast to the study conducted by Monk (1944) cited in Kaplan and Owings (2002) who suggests that there is a need for teachers to have in-depth

subject knowledge to deliver effective lessons, it was clear that the lessons I had delivered over the term were effective despite having little math subject knowledge. Evidence from the reflection correlates with the findings of both Askew *et al*. (1997) cited in Ellis (2009) and Timperley (2007) who suggest that the belief system of subjects has more of an impact than the depth of knowledge.

Throughout PTE1 I recognised that Digital Competence was one of the key subjects being taught throughout primary settings in accordance with the forthcoming Welsh curriculum that is currently being revised. However, with very little understanding of the subject and not having ever been involved in Digital Competence lessons, I was not confident in teaching this subject. According to the report published by OFSTED (2002), teachers' low levels of confidence in ICT, results in children developing a low self-esteem and confidence in their learning which will affect their progress and achievements in the subject. I understood that having no subject knowledge or pedagogical subject knowledge in ICT would result in poor teaching and therefore I decided not to adopt the teaching of the subject during PTE1. Nevertheless, my foundation knowledge of the subject was high as I recognised that ICT is of the upmost importance throughout education. However, due to poor subject and pedagogical knowledge I felt that I was unable to plan effective lessons or make connections with the learning which led to my inability to adopt the dimensions of the knowledge quartet (Carden, 2018).

This resulted in low-confidence in contingency events occurring during sessions, as I would have been unable to 'think on my feet' to respond to questions and other events that may arise. In relation of these findings, I understand that my low subject knowledge and knowledge base for teaching skills influenced my decision of not teaching an important area of learning during PTE1 and therefore does not correlate with the afore mentioned studies. To overcome these challenges, I recognise that there is a need to research the Digital Competence Framework and familiarise myself with the Successful Futures curriculum that will enable me to gain a level of subject knowledge that will later influence the pedagogical strategies, resulting in an effective learning environment taking place. This challenge outcome has been supported by the Knowledge Quartet which suggests that having strong foundations in a subject will influence the transformation and connection dimensions of teaching, allowing

practitioners to plan and deliver lessons that are pedagogically powerful (Boaler, 2000).

My decision to not teach ICT, due to the lack of subject knowledge, has been supported by the findings of Metzler and Woessmann (2010) who suggest that teachers with high subject knowledge and understanding increase pupil's achievement by 16.6% and therefore a teacher's subject knowledge is a vital factor and contributes significantly to the overall teaching qualities.

Overall, my reflection of specific subjects highlight that my subject knowledge was poor, however my knowledge base for teaching such as pedagogical knowledge was effective. In contrast to these findings, my subject knowledge of Literacy was significantly higher than ICT and Maths, which led to me having higher confidence levels when asked to teach the subject throughout PTE1. This was a result of having taught literacy on many occasions throughout my degree. My foundation knowledge of the subject influenced my decision to accept the role and responsibility of teaching literacy throughout placement. The half term topic was Mexico and therefore my aim was to create and sequence various lessons that would lead to the children creating a salsa dip recipe in preparation for making salsa on 'Epic Friday'. This links closely to the connection dimension of the knowledge quartet, stating that coherent planning and delivery of lessons in one subject will later lead to higher pupil achievement, enabling children to make links and connections with their learning. (Donaldson*, et al*., 2013).

Over many lessons, I ensured that children were familiar with the style of writing a recipe using different academic and literacy skills such as bossy verbs, time connectives, instruction writing etc. Each of these literacy skills were taught over several lessons extending their knowledge further. This form of teaching evidences that I have used my subject knowledge and how it would influence the topic's outcome. Despite demonstrating a high level of subject knowledge, my knowledge base for teaching skills was also used throughout the literacy lessons, such as various pedagogical approaches. According to Shulman (1987) during the stage of transformation children begin to learn about subjects through explanations, analogies and examples during the delivery of the lesson (Kleickmann, et al., 2012). In relation to this reference, I provided children with an example of a recipe on 'how to make a

gingerbread man', which encouraged children to recognise the style of writing and the literacy techniques used when writing a recipe.

The reflection draws emphasis on the many arguments outlined in the literature review, as both subject knowledge and knowledge base for teaching skills were vital aspects during the delivery of literacy lessons throughout PTE1. These findings link closely to the conclusion of Cotton (2016) who argues that the most effective teacher should have an in-depth knowledge and understanding of the subject's they teach and when their subject knowledge does not meet a certain level it will significantly influence pupils learning and achievement. However, it also links to the findings of the Sutton Trust (2014) which highlights that teachers require the ability to use and transfer their knowledge through pedagogical approaches to create an effective learning environment for children (Brooks, 2016).

The above findings differ throughout each subject as most of the reflection highlights that having strong knowledge base for teaching is beneficial and has a great impact on the delivery and effectiveness of teaching. Likewise, having both subject knowledge and knowledge base for teaching in literacy influenced the effective lessons being taught throughout PTE1. However, it was clear that having neither of these factors in a specific subject lead to low-confidence overall and affected the decision to plan and deliver lessons. Therefore, there is a need for teachers to have at least one factor to deliver effective lessons and for pupils to achieve their full potential in their learning (Kleickmann, et al., 2012).

## Conclusion

The findings of the reflection correlate with the studies mentioned in the literature review, as during the teaching of both Mathematics and Science, it was clear that my depth of subject knowledge was poor. Nevertheless, having significantly higher levels of knowledge base for teaching, as suggested by Shulman (1987) and many other researchers, compensated for my lack of confidence in the knowledge of the subject. The pedagogical approaches that were implemented during the delivery of subjects were effective and resulted in the children understanding and progressing throughout their learning journey. The findings of the maths and science lessons reflect with the findings of Askew *et al*. (1997) cited in Ellis (2009) and Timperley (2007), who emphasises the importance of having effective pedagogical approaches to subjects,

as opposed to the findings of Monk (1944) who suggests that teacher subject knowledge is the key to successful teaching and pupil achievement.

Despite the findings of the Science and Maths lessons, it is evidenced that both factors were significant during the delivery of literacy sessions as opposed to one specific aspect. These findings correlate with the discoveries of the Sutton Trust (2014) which emphasise that there is a relationship between subject knowledge and pupil achievement as well as knowledge base for teaching skills (Brooks, 2016). In contrast to both findings, my reflection on teaching ICT highlights that there is a need to have confidence in at least one aspect of knowledge as it can result in not having the ability or confidence to teach at all. Overall, the findings throughout the literature review and reflection suggest that a knowledge base for teaching skills is an influential component in pupil's achievement, as without these skills teachers lack the ability to transfer and make connections with learning and in-depth subject knowledge cannot be put to use (Kleickmann, et al., 2012: Ma, 2012).

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# Appendix 1

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|---|---|---|---|---|---|---|---|
| **Name of Trainee:** | 1800328 | **Session ref:** | **Session 3.2 1:30 – 3:00** | **Date:** | 12:11:18 – 16:11:18 | **Class:** | Year 2 |
| **Targed(au) Hyfforddi Personol** | To provide a clear introduction | | | **Number of learners:** | 17 | **Age:** | 6-7 years |

**Cynllun Ffocws y Cyfnod Sylfaen**

**2d**

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|---|---|---|---|---|---|
| **Learning objectives/intentions:** | Can I compare the difference between things that are living, dead and never been alive? | **Success Criteria** | • I can explain some of the life processes.<br>• I can explain how life processes can tell us if something is living, dead or has never been alive.<br>• I can say if something is living, dead or has never been alive.<br>• I can give reasons for my answers. | **Meeting learners' needs**: | • Differentiate the activities according to their abilities<br>• Support all leaners when necessary<br>• Use resources and flashcards to introduce the task.<br>• Differentiate for SEN children |

| Introduction/plenary tasks | Main activities | Resources/ Key Vocabulary | Assessment for Learning (strategies and opportunities) |
|---|---|---|---|
| **Introduction**<br><br>Gather children at the carpet and discuss what they will be learning – alive, dead, never been alive<br><br>Ask the children to state things that are alive ….<br><br>How do we know?<br><br>Discuss ... breathing, movement and growth. – humans, animals and plants<br><br>Discuss things that have never been alive – ball, clock etc.<br><br>How do we know?<br><br>Do not breathe, grow or move on their own.<br><br>Discuss materials that may have been alive once – fruit, leaves, wood<br>How do we know? What are their properties?<br><br>Are the properties alive? | **<u>Trainee focused task</u> (purpose, outline of trainee's role and children's learning):**<br><br>**L.A**<br>Using images, place them under the correct category on the grid on their worksheet. – alive and dead only.<br>Provide an example of an image in each column for them to follow.<br><br>**M.A x 2**<br>Using the images, place them under the correct column on the table – alive and dead only.<br>No example to follow – lots of adult support<br>Discuss why they belong in each column<br>**H.A**<br>Encourage them to use their own ideas to fill in each column – alive, dead and never been alive to be used.<br>Provide support throughout<br>Can use ideas from the introduction<br><br>**<u>Additional adult tasks</u> (purpose, outline of additional adults' role and children's learning):**<br><br>A.J – to assist and support child A to complete the activity. One-to-one | Flashcard images<br><br>Flexible circles – circle time<br><br>Worksheet<br><br>Images | Traffic light system. Children colour the light that they feel best suits how they felt throughout the task.<br><br>Red – no understanding<br><br>Amber – understands with support. May need extra sessions<br><br>Green – confident with the learning |

<table>
<tr><td></td><td rowspan="2">Child A to complete the activity – recognising living things – place images in a table and state what they are<br><br><u>Independent learning opportunities</u>:<br>• Topic desk – jigsaw– living and dead<br>• Literacy corner – living things quiz<br>• Reading corner – living or dead profile<br>• Small world sort animals into their natural habitat</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>Plenary<br><br>Questioning<br>- Ask them what they learnt?<br>- To show their work to other pupils<br>- Afl – assess their own work – traffic light system</td></tr>
<tr><td colspan="4">Curriculum coverage (range and skills)<br>Knowledge and Understanding of the World - Science<br>- observe differences between animals and plants, different animals, and different plants in order to group them<br>- experiment with different everyday objects and use their senses to sort them into groups according to simple features</td></tr>
<tr><td colspan="2">Literacy (LNF)<br>Listen to and carry out instructions<br>identify and use text features, e.g. titles, headings and pictures, to locate and understand specific information</td><td colspan="2">Numeracy (LNF)<br>present work orally, pictorially and in written form, and use a variety of ways to represent collected data</td></tr>
<tr><td>DCF<br>Research living and non-living things using ICT</td><td>Thinking</td><td>ESDGC</td><td>YCC</td></tr>
</table>

# Appendix 2

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|---|---|---|---|---|---|---|---|
| **Name of Trainee:** | 1800328 | **Session ref:** | **Session 5.5 9:30 – 10:35** | **Date:** | 4.12.18 | **Class:** | Year 2 |
| **Targed(au) Hyfforddi Personol** | Take on all of the roles and responsibilities of the class teacher at all times<br>Use my own initiative and independence when doing so with no guidance from the class teacher | | | **Number of learners:** | 17 | **Age:** | 6-7 years |

**Cynllun Ffocws y Cyfnod Sylfaen**

**2d**

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|---|---|---|---|---|---|
| **Learning objectives/intentions:** | Create a Mexican rainforest factbook | **Success Criteria** | • Identify animals in the rainforest<br>• Identify the layers of the rainforest and its living things<br>• Identify rainforest facts<br>• Design a rainforest | **Meeting learners' needs**: | • Differentiate the activities according to their abilities<br>• Support all leaners when necessary<br>• Use prompt to support children throughout |

| Introduction/plenary tasks | Main activities | Resources/ Key Vocabulary | Assessment for Learning (strategies and opportunities) |
|---|---|---|---|
| **Introduction**<br><br>• Gather children at the carpet<br>• Have a short recap over science sessions that children have been taught over the past few weeks<br>• Deliver a short introduction to the whole class on world habitat's<br>• Present the power-point on rainforests in Mexico | **<u>Trainee focused task</u> (purpose, outline of trainee's role and children's learning):**<br><br>**L.A x 2 - Gwyrdd & Melyn**<br>• Sequence rainforest facts in their factbook<br>• Identify the animals that live in the rainforest<br>• Identify the layers of the rainforest<br>• Stick the images and facts in the correct section of the factbook.<br>• One example to be placed in each section to help the children with the task and sequencing<br>• Design a rainforest as their front page of their factbook<br><br>**H.A x 2 – Glas and Coch**<br>• Sequence rainforest facts in their factbook<br>• Identify the animals that live in the rainforest<br>• Identify the layers of the rainforest<br>• Stick the images and facts in the correct section of the factbook.<br>• Identify the animals that lives in each layer of the rainforest<br>• Design a rainforest as their front page of their factbook | Factbook<br><br>Images<br><br>Facts<br><br>Pencil<br><br>Colouring pencils<br><br>Glue | Traffic light system. Children colour the light that they feel best suits how they felt throughout the task.<br><br>Red – no understanding<br><br>Amber – understands with support. May need extra sessions<br><br>Green – confident with the learning<br><br>Smiley faces – happy, unsure, sad<br><br>Mr. Men cards –<br>'i am proud of my work'<br>'i could have done better'<br>'i worked hard'<br><br>Success criteria form – |

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|---|---|---|---|
| | **<u>Additional adult tasks</u> (purpose, outline of additional adults' role and children's learning):**<br><br>A.J – to assist and support child A to complete the activity. One-to-one.<br><br>child A to stick in the animals in the factbook<br>The rest of the factbook will be completed by supporter<br>.<br>Draw a rainforest<br><br>A.J to support child A to complete the activity. | | What worked well<br>Even better if |
| Plenary<br><br>Show children some of the completed factbooks | **<u>Independent learning opportunities</u>:**<br><br>Lego – create a rainforest and animals<br><br>Living, dead and never alive profile and quiz – literacy area<br><br>Small world area - sequence and sort the animals into the correct habitat | | |
| Curriculum coverage (range and skills)<br>- Knowledge and Understanding of the World<br>- use and make simple maps, to find where places are and how places relate to other places<br>- begin to recognise differences between their own locality, localities in other parts of Wales and in different parts of the world | | | |
| Literacy (LNF)<br>Listen to and carry out instructions<br>identify and use text features, e.g. titles, headings and pictures, to locate and understand specific information | | Numeracy (LNF)<br>present work orally, pictorially and in written form, and use a variety of ways to represent collected data | |
| DCF<br>Use i-pads to research rainforests and Mexican habitats | Thinking | ESDGC | YCC |