

THE EFFECTS OF PLAY ON LEARNING
IN AN ELEMENTARY CLASSROOM

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Abstract

The Effects of Play on Learning in an Elementary Classroom

With the current educational trends towards standardized testing, competitive education and baby geniuses, play is making a quick exit out of the learning environment. Children in today's society are expected to learn to read and write by the age of four. Their intelligence is being tested from the time they are born; society somehow, has forgotten that children are supposed to play. In this study I implemented a mixed research approach to examine the effects of play on a highly academic group of four and five year old students. During this time, I allowed students to play before some learning episodes and incorporated play into other learning episodes. I used the quantitative method to measure learning in the areas of reading, vocabulary and comprehension over time. The qualitative method was incorporated to measure the effects of play on students' self-regulatory skills. During this time I found that play is most effective when integrated into the learning episode and students were invested in the learning. In this research the reader will find multiple examples from my own classroom in which play was integrated into the learning environment suggesting that play does affect student learning.

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Introduction

It is Monday morning and the day starts by waking up at 7:00 am to get ready, eat breakfast and be out the door for an arrival time of 8:30 am sharp when pre-school begins. Now, it is about 10:30 am when you get your first glimpse of some free time but only for 20 minutes. This free time is not to be seen again for another two hours and will last a total of 30 minutes. From there it is work, work and work till the day is over at 3 pm, if you're lucky. Then off to the daily duties of Spanish lessons, piano lessons, soccer, gymnastics, or ballet depending on the day of the week. You finally make it home by 5:30 pm only to be faced with the realization that you have 25 pages of homework to complete by the end of the week. So, it's homework, dinner, bath time and off to bed you go.

Families' lives are so high-demand now-a-days; everything is scheduled ahead of time; otherwise families just don't have time for it. Do children ever really take the time off to do something they enjoy doing? Do they let homework and extra-curricular activities (which look exceptional on a college application) dictate what they will be thinking about throughout their weekend? In this competitive world of high stakes testing and No Child Left Behind, when are children supposed to find time to enjoy themselves and take part in play activities? There are factors which can infringe on our ability to perform well at school such as being a part of the latest plethora of clubs and organizations.

The opening paragraph describes the daily life of a student, a five year old student. We have become a fast paced society which is academically demanding. There are speculations about American schools and the idea that they are failing our society.

Now there is a demand for rigorous academic programs for children as young as the age of four. Academics are an essential part of growing up, not only as an individual, but also as a competitive nation. With the entire list of extra-curricular activities parents plan for their five year old child's eventual college entrance and the intense academic learning, when are children finding the time to just play? In this quantitative and qualitative study I will be focusing on the correlation between free play and academic learning. Does having time to be creative and pretend play make for a better focused and ready to learn student?

Literature Review

In this literature review I organized the pertinent research into four different themes. The first theme focuses on research surrounding the definition of play. Second, I focus on the definition of learning. Third, I review literature on the various effects of play on learning and learning on play. Lastly, I review how current research has integrated these two themes into our standards based classrooms.

Play

Samuelsson and Johansson note that children's play is a form of expression which can be seen as an interpretation of the world around them (2006). In Welsch's article, Smilansky and Shefatya deem pretence play as an avenue which requires students to use mental representations in order to change the meaning and actions of objects (2008). In Samuelsson and Carlsson's (2008) article, Levin and Glover state that play gives children opportunities to be in control of what is happening and what they know. Additionally, they affirm that play allows children to exercise self-control and develop what they already know, take turns, cooperate and socialize with others. During a time of play children are able to think, create stories and play simultaneously (Samuelsson and

Johansson, 2006). Play comes in a variety of forms, and can be defined as self-managed, creative, light-hearted, and spontaneous, involving rule making and breaking (Warner, 2008).

In Samuelsson and Johansson (2006), Aristotle speaks of this concept in the form of “*mithos*” and “*mimesis*”. These two concepts are intertwined by Aristotle in play. *Mithos*, Aristotle states, is the creation of the narrative or the story which is being told or played. *Mimesis* is the actual bodily movements being created by the children who are playing. In Aristotle’s view, it is when these two concepts meet that genuine play takes place.

Piaget views play as an adaptive behavior that is vital in furthering children’s metacognitive abilities. During “functional assimilation” children might count a set of blocks or toys over and over again, not because they were told to by an instructor, but because it is part of the game they are currently playing (Singer, 2006). Piaget as cited in (Singer, 2006) believed that cognitive development occurs through assimilation and accommodation. During assimilation the child will interpret their environment based on the knowledge they have already acquired. In accommodation, children will change or expand on pre-existing knowledge. Play provides opportunities for children to interact with the environment around them and thus, cognitive development occurs (Singer, 2006).

Vygotsky emphasized the interactions between children, parents, teachers and peers in the development of cognition. Vygotsky relates play to children’s developing sense of control and regulation of their own learning. In his theory he argues that children develop within a “zone of proximal development,” and when tasks are too difficult for

the child, the task can still be mastered through the guidance of someone skilled at the task (Singer, 2006). At the lowest level of the “zone of proximal development,” a child will only do what he/she can do alone, but at its highest level a child can learn more with guidance. When children set their own level of challenge they are always learning (Singer, 2006). Both Piaget and Vygotsky view play as an opportunity for children to learn about the world around them.

Learning

Learning is what teachers strive for on a daily basis. Samuelsson and Johansson (2006) assert that learning is characterized by an understanding of learning as a question of seeing, perceiving, experiencing, distinguishing or understanding something in a new and different way. According to Whitebread, Coltman, Jameson, and Lander, (2009) learning is connected to cognitive problem-solving skills developed during the time of play. This researcher views learning as either “incidental” or “intentional.” Incidental learning happens on a daily basis; intentional learning takes place during an intentional period of learning and requires the use of metacognitive activities like planning, selecting cognitive strategies to be implemented and evaluating your own work. Learning happens on a daily basis through interactions with the world around us (Samuelson & Johansen, 2006).

The Effects of Play on Learning and Learning on Play

According to Whitebread et al. (2009) there is a distinct and crucial relationship between play and learning. The research states that play contributes to learning by supporting children’s metacognitive and self-regulatory skills, which in turn contribute to the development of problem solving skills and creativity. Much of past research has not

made a connection between learning and play due to the fact that most researchers were looking for an immediate connection between the two, such as conditioned responses or the acquisition of knowledge and skills. Today, research aims to develop a connection between the life-time effects of play and learning. For instance, Zigler, Singer, and Bishop-Josef (2004) emphasize the importance of play in helping children learn basic literacy skills, social awareness, and creative problem solving.

Whitebread et al. (2009) found that the self-regulatory and metacognitive skills developed during play improved the learning for a low-income group of students around the US. Within the Whitebread et al. (2009) article, Schweinhart and Weikart developed a program for these students titled High/Scope in which students were encouraged to follow a pattern of learning outlined by the researchers of Play-Do-Review. This method supports children's abilities to plan, take responsibility for their own learning, and evaluate their own learning. This program resulted in an immediate increase in IQ and over a 23 year life span showed a positive impact on learning. Olfman's (2003) cited Dorothy G. Singer and Jerome L. Singer who provided parents and teachers with the tools needed to stimulate healthy symbolic play, in order to execute their "Learning through Play" research. This research resulted in higher test scores of school readiness.

Singer (2006) believes self-regulatory skills are developed during the time of role play. For example, when children pretend to play teacher, they must adopt the rules of the classroom and the perspective of the teacher. They self-regulate their behavior and therefore control any outburst they may have. Make-believe play is based on rules, and children must adhere to the rules based on that pretend play situation. Play is a way for children to work through their own emotions (Singer, 2006). Jensen (2001) states that

play provides many trials and chances to learn; it is low risk and gives us time to correct mistakes. Jensen (2001) introduces readers to Byers and Walker who claim that playing animals, including humans, are motivated to repeat newly acquired skills, thereby increasing the strength of neurological structures and opening opportunities for further learning. Stephens (2009) cites Hirsh-Pasek, Golinkoff, Berk, and Singer's review of research which confirms that children's self-initiated play nurtures overall development, not just cognitive development. In fact, their research builds a strong case that childhood play is a required experience in order to become a civilized human being. Jacobson (2008) states that child-initiated play, not memorizing information, is the vehicle through which children develop many of the skills that education reformers and business leaders say they need, such as collaboration, critical thinking, and confidence.

In Hanline, Milton, and Phelps (2010) Vygotsky argues that play contributes to the development of symbolic representation, which aids in many aspects of learning. Stroud believes that blocks are representational and serve as an introduction to symbols, supporting emergent literacy learning in a context which is developmentally appropriate (as cited in Hanline et al., 2010). During symbolic representation a child will use a wooden block as something else (a telephone) therefore, separating the actual object from its meaning and developing abstract thought. Once a child has developed representational abilities, they will be able to develop reading and writing capabilities where sounds are represented by symbols. In this theory, play is viewed as a transition from early childhood thinking to the capability of abstract adult thinking (Singer, 2006).

On the other hand, in Singer (2006) it is stated that learning is having a notable impact on play. Hladky notes that play is being cut from schools due to the fact that it

infringes on the needed time for academics (Singer, 2006). Additionally, Axtman found a school in Atlanta that was built without a playground (as cited in Singer, 2006). The turn away from play with-in the classroom is largely due in part to the poor academic achievement of many American schools (Elkind, 2007). Singer cites Zigler and Bishop-Joseph describing how since the time of Sputnik the United States began to move away from an emphasis on play to an emphasis on academics and cognitive skills. In Worch, Scheuermann, and Haney (2009) Bergen states that there persists to be an erroneous belief that academic content standards cannot be met through play-based activities, which has caused playful methods of learning to virtually disappear from school classrooms.

Because of the No Child Left Behind act and its standardized testing, there has been a further emphasis on academics, in turn leaving less time for play within the classroom. Additionally, more teachers are focusing on teaching to the test in order to meet the standards assessed by the National Reporting System (Singer, 2006). Stipek (2004) argues that whether the emphasis is on play or the emphasis is on learning, quality early education should focus on both hands-on play-based learning and direct instruction for academic success.

Play and Learning in the Classroom

In a classroom of 26 students in Barcelona, Spain, Edo, Planas, and Badillo, (2009) showed that the integration of play within the classroom enhanced mathematical learning for students within the scenario of a bakery. Students learned an abundance of information about what a bakery is, what you need to bring with you in order to purchase baked goods, how much the baked goods cost, and so on. Through symbolic play, five to six year old students were able to self-regulate their own pretend experience. The teacher

was uninvolved, for the most part, unless approached by a student. Information was exchanged during this time which heightened the level of metacognitive thinking.

In addition, as a class they traveled to a bakery and took note of the interactions which took place within the bakery and between the employees and buyers. When they went back to the classroom their symbolic play was enhanced, as well as their learning. When the symbolic game of bakery first began, students played without the use of any mathematical verbiage or representations. At the end of the study students were using mathematical terms, calculators to add the items sold, counting money and were able to draw detailed pictures depicting their own personal experience at the bakery. All this was accomplished during a time of symbolic play where students learned about the world around them through some guidance from their instructor (Edo et al., 2009). In Welsch's (2008) article thematic fantasy play enhanced comprehension. Through the use of props and a children's book within the classroom setting, peer interaction was prompted as well as an increased ability to understand the story. Lastly within Worch et al. (2009), Aubusson, Fogwill, Barr and Perkovic found that role-playing in science classrooms developed deeper student understanding, improved student motivation, and facilitated learning across a range of ability levels.

Gallegos' (1983) study shows further evidence that play integrated curriculum enhances learning. A total of 48 kindergarten and pre-school students, half of whom were enrolled in a learning through play curriculum and half who were learning through direct teacher instruction, were pre-tested and post-tested on a number of academic readiness skills using the Brigance Diagnostic Inventory of Basic Skills. The outcome of this study proved that out of the 14 skill sections in which the pre-schoolers were tested, the play

group scored higher than the direct instruction group in 13 skill sections. Furthermore, the kindergarten group was tested on 16 skill sections; the play group tested higher than the direct instruction group in 11 skill sections. This suggests that in order for learning to take place in an academic environment, the inclusion of play is necessary. Williams and Rask (2003) underline the importance of children being able to hear the sounds in words. Through frequently playing games and hearing nursery rhymes, children will develop phonemic awareness and have early success with reading (Rask, 2003). This suggests that there might be a link between imaginative play and the ability to learn various aspects of literacy.

In conclusion, it can be said that Piaget, Vygotsky and other researchers view play as a part of developing various skills needed for learning. It can also be noted that play is being pushed out of the classroom because of the demands for high performance on academic testing. Play has an effect on children's cognitive understanding of mathematics, science, and literature. Play helps students develop the social skills needed in life for daily interactions. Thus, a significant relationship between imaginative play and logical thinking has been found between five and six year old students (Peisach & Hardeman, 1985).

Research Question

In light of this review, I have found that many researchers believe there may be a correlation between play and learning. However, questions still remain. The primary question at the heart of this project is: What is the connection between play and learning in a classroom of four and five year old students within an academically structured environment? A secondary question arises: Does pretend play make for a better focused

student who is able to self-regulate? In this study I focused on the connection between creative play and learning, specially focusing on language arts.

Methodology

Methodology and Rationale

In this project, I used a mixed method approach to better understand symbolic or pretence play. I used a quantitative method to incorporate symbolic and pretence play into a Pre-K classroom during which time I gathered, examined and analyzed data. The quantitative approach was used to numerically measure how one incident affected another. This was an appropriate method for this research because I measured the numerical success of the class I observed and the effects of play on their ability to learn phonics, vocabulary and expand their comprehension. I used a qualitative approach to determine if self-regulatory skills were being developed. In qualitative research human interactions are closely observed. This was an appropriate method because I explored how play effects self-regulatory skills.

Sample

This study was conducted at a Pre-K-8 private school. The focus group was a Pre-K, academically centered, English/Social Studies classroom near Redmond, Washington. The population of the school is made up of mostly high achieving families with high incomes. These families value education and extra-curricular activities which stimulate the mind. The make-up of this class consists of mostly Russian, Indian, Japanese, Chinese and Korean students with rigorous schedules. This sample was an appropriate choice for my research question because I attempted to incorporate play into a classroom of highly academic, high achieving Pre-Schoolers. I collected data and observations in

this classroom to determine if there was any correlation between symbolic or pretence play and learning.

Instrumentation

In this project I measured the success of a Pre-K class taught by myself. This class was taught as a whole, adhering to the direct instruction method favored by the school, at the same time daily. Comprehension, vocabulary and phonics were the focus as I gathered and analyzed data. I collected verbal answers to various phonemic and vocabulary cues. During the phonemic testing I showed students a card and they identified the sound or word as it was on the card. As part of the vocabulary testing I showed students a picture and they were to tell me the word which correlated with the picture shown. I also created a play which students acted out during class. During this time, I incorporated play and learning simultaneously into the classroom. Lastly, I kept an observational record of how the class behaved before, during and after a time of play.

During this time, if pretense or symbolic play affected learning within the classroom there would be a difference shown in the data collected within the Pre-K classrooms. I used the behavioral observations made within the class, the collection of student work and verbal questionnaires to determine whether play had an effect on student learning. I ensured student anonymity by creating a coded system which was kept separate from each other.

Analysis/Validity

After collecting the data from the Pre-K classroom, I analyzed it by looking for differences or similarities between when the class had play time and when they did not. I analyzed the results from the verbal assessment to see if play had an impact on student

achievement. After the class thematic play, I asked students comprehension questions such as: who are the main characters and what is the setting and plot? These questions determined if integrating play into the classroom affected cognition. Lastly, I reviewed the observational notes taken about the class and looked for similarities or differences within self-regulatory behavior.

Within research, it is vital for the author to identify his or her biases. I have been with this school for about five years and have every year watched parents strive for their child's academic excellence. I myself do not consistently use play based learning within my classroom, as it does not correlate with the school's curriculum. However, I have seen other teachers use it within their classrooms and would like to see the effects of it in my own classroom. I will, additionally, be the one teaching and evaluating the student's results.

Data

Two different methods were used in this research project. First, I presented the qualitative data collected during the observational period of the research which lasted a total of six weeks. For two weeks, or phase one, students spent the first 30 minutes of class time without play time before class began. Instead of playing students were asked to complete a morning warm-up of correcting various grammatical mistakes. During this time reading, vocabulary and comprehension results were collected; no play activities were integrated during the class time. As a result of not having play time before class, I noticed students seemed to be tired. Students had a difficult time staying focused on the task before them and class usually finished ten minutes before the one hour class period was over due to the lack of student engagement. There was not a significant increase in

misbehavior, but the class was extra chatty and more reminders needed to be given. There was no significant change in the learning.

Once the first two week period came to a conclusion, the next two week period, phase two, consisted of a 30 minute play time before class began in the morning. Throughout this time class was held as usual. Reading, vocabulary and comprehension data was collected; I did not integrate any additional play activities during our class time. During this time I noted that students' bodies were calm and ready to begin class. Their attention span was increased; they were able to stay on task for longer periods of time, however, they were still not able to work for a complete one hour period. There were very little, to almost no management issues. However, I did not notice a significant increase in learning.

Finally, during the last two weeks of this research, phase 3, we spent class time integrating play into our learning. During this time students were focused and interested in the learning. There was minimal management necessary, and the classroom discussions revolved around the learning. Students were able to work the whole class period, and at times did not want to stop when class was over. The data collected during this time showed significant learning.

The tables below indicate the results during this six week period of learning for vocabulary, phonics and comprehension. During this time, as previously stated, learning was divided into three learning phases. The first phase, without play period before class, included the normal school schedule of arrival, warm-up activity, class and recess. No play activities were integrated during the first phase. The second phase, with play period before class, included a play period before class (instead of a warm-up), class and recess.

Lastly, phase three, integrating play and learning, included a play period before class, play was integrated during class time, then students went to recess.

The first column in table 1 shows the Student Identification Number, which represents the students who were involved in this research. The following three columns show the number of vocabulary questions students identified correctly out of the total number of questions asked. For example, 17/20, in any given column, shows that a student correctly answered 17 vocabulary questions correctly out of 20 during that specific phase. Table 2 assessed the same group of students on their phonics skills. Here, the reader can see the number of correct answers students achieved out of the total number of questions asked during the various phases of the research. Lastly, table 3 measured the comprehension skills of those same students. The three columns reveal the number of questions students answered correctly out of the total number of questions asked.

Table 1

Vocabulary

Student Identification Number	Phase 1	Phase 2	Phase 3
1	17/20	17/20	20/20
2	18/20	18/20	19/20
3	17/20	16/20	18/20
4	16/20	17/20	19/20
5	18/20	18/20	20/20
6	19/20	19/20	20/20
7	18/20	18/20	19/20
8	17/20	17/20	19/20

(See Appendix B for Vocabulary List)

Table 2

Phonics

Student Identification Number	Phase 1	Phase 2	Phase 3
1	31/40	32/40	35/40
2	35/40	37/40	40/40
3	38/40	38/40	40/40
4	28/40	31/40	32/40
5	36/40	38/40	39/40
6	33/40	36/40	38/40
7	35/40	36/40	36/40
8	37/40	36/40	37/40

(See Appendix A for a List of Phonics Words)

Table 3

Comprehension

Student Identification Number	Phase 1	Phase 2	Phase 3
1	1/3	1/3	3/3
2	2/3	2/3	3/3
3	3/3	3/3	3/3
4	1/3	2/3	2/3
5	2/3	1/3	3/3
6	2/3	2/3	3/3
7	2/3	2/3	3/3
8	2/3	2/3	3/3

(See Appendix C for a List of Comprehension Questions)

Data Analysis

As previously stated in this research paper, this research project aimed to investigate the correlation between play and learning in a highly academic classroom. The first part of my research dealt with behavioral observations. This research was broken up into two week periods over a six week span of time, during which different levels of play were integrated into the classroom. During the first two weeks students were not exposed to any play time before the beginning of class. During this time my observations showed that students had a difficult time paying attention during class,

sitting still and completing their work. This attests to the fact that the lack of play within the classroom decreased student's self-regulatory skills and attention span. The following two weeks students were allowed a 30 minute play time before class. During this time I noted that students were calm, but could not stay focused the whole time. Lastly, when I integrated play into the school day, students acted very differently. Students were engaged, invigorated, focused and did not want to stop learning. Students were so excited to create their own plays, movements, songs, and signs to help them learn.

There were three sets of data which were collected in order to measure how play correlated with learning. First we focused on vocabulary. During this time students learned all twenty words and were tested once during each phase of the research. Very little change was noted between the non-playing and playing weeks. When play was integrated into the classroom there was an increase in the learning and students seemed to be engaged in the activities.

Phonics data was also collected during this research. Once again very little change was noted with the non-playing and playing weeks, however, when students were able to integrate play into their learning students' reading scores improved. Lastly, comprehension was tested. Comprehension was one area of research in which I saw the biggest growth in student learning. During the first two weeks students were asked the same three questions and gave similar to slightly improved answers. However, when play was integrated into the learning, students' learning increased significantly. During the duration of this research I noted that vocabulary and phonics results were increased when play was integrated into the learning. When play was integrated and comprehension was measured the increase in learning was very significant. Students were excited about the

activity, which in turn, increased learning. Once students had been introduced to the idea of integrating play during comprehension, they began to create their own plays and ideas based on other books we were reading in class. Students thought this was so fun, they were even acting out their plays during recess time. Within Worch et al. (2009), Aubusson, Fogwill, Barr and Perkovic found that role-playing in science classrooms developed deeper student understanding, improved student motivation, and facilitated learning across a range of ability levels. I found this to be very true within my classroom. Now that I have analyzed the collected data, it is clear that play integrated into the classroom does increase learning among four and five year old students.

Recommendations

In light of all of the academic research and data collected during this project I have come to several conclusions. At the beginning of this project, I set out to measure the correlation between play and learning and its effects on young students in a highly academic classroom. I came to find that play is a vital part of learning, but not in the way I had originally thought before I began the research.

During this process I discovered that my students needed that play time before class so that they could be better focused, however having that play time did not significantly increase their tests scores, as I originally thought it would. What I came to find is that when play was incorporated into the classroom, alongside learning, students' scores were significantly impacted. As students were emotionally and intellectually engaged in the activity, they were better able to self-regulate their behavior.

In turn, now that I have gathered the information about play within the classroom, I know as a teacher that I cannot just allow my students to play all day, even if they are

learning. Society, such as, parents and other officials would like to see physical results on paper. Therefore, there needs to be a way to combine this research with the need for physical evidence of learning as Stipek (2004) mentioned in the literature review.

Schools need to combine student play with teacher directed lessons for significant student learning to take place. It is through combining both of these methods that I believe true learning will take place in the classroom. Therefore, my study leaves me additional questions, which have led me to ponder about the idea of integrating the current research about play with the concept of Primacy-Recency learning in Souza's (2011) book. We know that when teaching, shorter lessons are always better. Souza (2011) notes that there are three learning phases: Prime-time one, down time and Prime-time two. Most of students' learning occurs during Prime-time one, all new and vital information should be taught during this period. Down time, gives students the ability to exercise what they have just learned. Lastly, Prime-time two is a review of what was learned in the day's lesson. If pretense play was to be combined with the concept of primacy-recency, would teachers be able to extend the down-time during which students are supposed to practice the skills learned during Prime-time one? Would this combined teaching method lead to physical evidence of learning and improved tests scores in the classroom? Additionally, during this research I noted that after integrating play into the classroom, students began to integrate play on their own and increasing their learning. This idea lead me to ask, is teacher directed play more effective during the learning session than students directed play? And does the emotional connection students create during play effect how much learning they can retain? These questions are pertinent to learning because they could

change the way we teach in schools and prepare students for state wide testing. These are the questions I am left with after the completion of this research project.

Conclusion

In conclusion, it is important to note that in a high stakes testing and academically driven world, children are allotted less time to play. However, it is during this play time that children develop the cognitive and self-regulatory abilities to perform well within the classroom. Throughout my research I found various sources claiming the benefits of play when associated with learning. As the data from this research was collected one thing became very apparent, play and learning can be integrated within the classroom.

The research and the data collected during this project show that students are engaged during play sessions. When integrating play session with learning, students benefit by retaining more of the material taught. This became very evident when I combined play and learning in my own classroom in order to improve comprehension. I have been teaching for about five years and I have never seen my low-achieving students increase their learning more quickly than when play was integrated. Therefore, I would urge educators not to dismiss this concept, due to outside pressures. Instead, the more time spent emotionally connecting the material to a student's life through play, the less time teachers will spend re-teaching the material later; thus, potentially increasing learning and still allotting enough time to meet state and national standards. Finally, throughout my research the data collected unanimously showed improvement in student learning. Therefore, it is the combination of play and learning that will create life long learners and successful students.

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Appendix A

Letters Sounds:

A n G q J i P b M r

Short Vowels:

bug lip man dog vet cat big cup pen mop

Long Vowels:

name fuse bike mole meet play use hear boat pie

Blends:

plate black from truck green flip scrape cross skunk split

Digraphs:

chat night phone graph then shout wish cheese white joseph

Appendix B

Vocabulary list:

Flutter	tracks	measure	claws		
stream	hoof	sink	dawn	release	
prepare	ruined	record	demonstrate	capture	
direction	broad	bird	tangled	narrow	tube

Appendix C

Comprehension Questions (based on the book *The Very Hungry Caterpillar* by Eric Carle):

Who is/are the main characters?

Where are they?

What is happening in the story?