Ask Me About It:
The Role of Inferencing Questions in Fostering Students' Reading Comprehension

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ABSTRACT

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Sabrina Tansey

Children's reading comprehension has primarily been measured through scores on literal and inferential questions of texts. However, few studies have assessed whether the process of answering questions influences children's level of comprehension. Moreover, no studies have explored the impact of 'embedded' inference questions, which are questions that contain inferences themselves. Here, a sample of 25 fifth and sixth grade students (10-12 years old) were given one short story to be read independently in class, each week, over the course of one month. After each story, students were asked six questions from one of four conditions: literal detail questions, causal inference questions, embedded inference questions, or were given no questions. After a one-day delay, students were then asked to retell the story. Performance on the questions and retell accuracy were measured. Children scored significantly higher on questions asking about literal details compared to the two inferencing conditions. However, in the retell task, children recalled an equal amount of story propositions in the literal detail and causal inference question conditions. The lowest retell scores were observed when students were either asked embedded inference questions or no questions at all. Furthermore, only literal detail questions were found to predict variance in students' retell scores. Directions for future research and educational implications are discussed.

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Introduction

Literacy is a focal point of early education and the foundation for lifelong academic success (Cunningham & Stanovich, 1998). The first step in learning to read is understanding that letters and letter strings represent specific sounds in spoken words: this is referred to as the alphabetic principle (Snowling & Hulme, 2011). Grasping this concept is crucial for students to accurately decode words (Perfetti, 1985), however, there is a growing body of research indicating that accurate word reading, while necessary, is not sufficient for achieving the ultimate goal of reading – comprehension (for review see van den Broek, Helder & Van Leijenhorst, 2013; Hoover & Gough, 1990). To gain the full meaning of what has been read, children need to understand both the literal and inferential messages embedded in the text (Nation, 2005). Recent evidence has shown that children experience more difficulty comprehending information derived from inferences compared to information that is explicitly stated, however the majority of studies have used questions as a measure of comprehension (Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999; Cain, Oakhill, Barnes, & Bryant, 2001; McClintock, Pesco, & Martin-Chang, in press; Nation & Snowling, 1997; Oakhill & Cain, 2012; van den Broek et al., 2013; Van Kleeck, 2008), leaving open the possibility that performance on questions may be distinctive from story comprehension. This study aims to clarify whether an educational intervention focusing on comprehension questions, particularly those highlighting inferences, may foster students' reading comprehension.

Literature Review

The State of Students' Reading Comprehension

Deriving meaning from texts proves to be a challenge for many students (Cain &

Oakhill, 1999; Nation, 2005). The prevalence of reading comprehension difficulties among North-American children is evidenced in recent statistics from the National Assessment of Educational Progress, which reveal that of a sample of 194, 000 fourth grade students in the US, 65% have 'basic' or 'below basic' reading skills, denoting that the majority do not demonstrate proficient or advanced skills in this domain (National Center for Education Statistics, 2013). Furthermore, approximately 10% of children aged 7-10 in the UK qualify as 'poor comprehenders' (Nation, 2005). This is a term that refers to children who are able to accurately decode printed words appropriate for their age-range but are challenged by making sense out of what they read (Nation, 2005).

Poor literacy skills extend into many facets of childhood. For example, recent research (Morgan, Farkas, & Wu, 2012) has shown that reading failure contributes to generalized socioemotional maladjustment in young children. Students' self-ratings and scores on standardized reading measures were analyzed using multilevel logistic regressions. Morgan and colleagues found that poor third grade readers are twice as likely as strong readers at the same grade level to consider themselves angry, distractible, sad, lonely, and unpopular in fifth grade. Such consequences profoundly influence the welfare of weaker readers, setting them up for a multitude of unfortunate outcomes that have little to do with reading.

Lyon (2001) brought the magnitude of this problem to light when speaking at a House of Representatives hearing on measuring success. Here, he declared reading failure a national public health problem, as lack of adequate literacy skills not only affects individual lives, but society as a whole (Lyon, 2001). It goes without saying, then, that educational interventions that improve young readers' comprehension processes are

of critical importance.

Construction Integration Model of Reading Comprehension

The importance of inference-making in relation to reading comprehension can be understood using Kintsch's Construction-Integration Model (1988), which frames reading as a cyclical processing activity that involves knowledge construction as well as integration. In the construction phase, all possible interpretations of a sentence are activated. Consider the following passage: *'The pedestrian saw the robber. He was afraid'* (adapted from Kintsch, 1988). Most readers will generate two plausible meanings –that the pedestrian or the robber was afraid. Prior knowledge or text information is then used during the integration phase in order to determine the most relevant meaning and deactivate the others. Prior knowledge in this case would lead the reader to infer that the pedestrian was afraid, however further text information may confirm the opposite, for example, if the pedestrian was an undercover detective. Determining the relevant meaning enables the reader to create a representation of the situation described by the text. This mental representation is made up of many inferences that elaborate on and connect different parts of the text (McClintock et al., in press). Throughout this process, readers continually make inferences to maintain text coherence. Kintsch's (1988) model thus suggests that inferencing is a key part of the reading process, and is essential for text comprehension.

Types of Inferences

There are several different types of inferences (see Van Kleeck, 2008 for complete review), however two main subcategories are studied most frequently: informational inferences and causal inferences.

Informational inferences. Inferences that expand the reader's knowledge about less essential-information in a story regarding the characters and setting are referred to as informational inferences. They allow the reader to create a more three-dimensional understanding of what is being read and serve to extend the text. An example of an informational inference can be seen in the following passage: "It was the night of the April PTA Fun Night, the monthly dance in the school cafeteria," (Angleberger, 2008, p. 6). Here, one would infer the season and weather based on the fact that this takes place in April. This inference supplies the reader with greater information about the setting, however neglecting to make this inference does not hinder understanding of the passage. Comprehension is therefore enriched but not dependent upon informational inferences (Van Kleeck, 2008).

Causal inferences. Causal inferences are implicit links explaining how or why two parts of the text are causally related. They are deemed crucial to story comprehension because they connect otherwise seemingly unrelated events. This is exemplified in the chapter 'Origami Yoda & The Homerun', in which a main character seeks help to deal with the embarrassment he feels about his below-average softball skills:

> So then I saw Dwight's Yoda puppet save Tommy at the dance. Well, Dwight's a nut, but I figured maybe he had tapped into the Force or something. (I totally believe in the Force and have spent a lot of time trying to focus my mind so that I can tap into it, too.) So one day at lunch, I went over to where Dwight was sitting with Tommy and those guys and said, "Yoda, can you tell me how to use the Force to hit a home run?" (p. 27)

Here, the reader must infer that the main character is going to ask for help *because* the Yoda puppet has helped others overcome their problems. Unless these two events are bridged with an inference, the main character's memory of Tommy being saved at the

dance seems irrelevant to the reader, when in fact it is the motivation behind the character's actions. Failure to generate causal inferences consequently results in an incomplete representation of the text (Van Kleeck, 2008). For this reason, the current study will focus on the causal inference subcategory.

Inferencing & Reading Comprehension

Research has shown that three components predict later reading comprehension: comprehension monitoring, knowledge of story structure, and inference generation (Oakhill & Cain, 2012). It is therefore no surprise that existing research consistently demonstrates that skilled comprehenders are more successful than poor comprehenders at inferencing (Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999; Cain et al., 2001; McClintock et al., 2012; Nation & Snowling, 1997; Oakhill & Cain, 2012; Van Kleeck, 2008; Yuill & Oakhill, 1988).

These difficulties are reflected in Bowyer-Crane & Snowling's (2005) study. Children from Grades 2-6 were assigned to either a skilled or less-skilled comprehension group based on performance on two standardized comprehension tests (NARA II: Neale, 1989, and Wechsler Objective Reading Dimensions, Wechsler, 1990). Both measures of comprehension included literal and inferential questions. Findings revealed that both groups were stronger at answering literal questions, demonstrating that inferencing appears to be more challenging for all readers. Less-skilled comprehenders however, experienced more difficulty answering inferencing questions, particularly those dealing with causal and informational inferences[1].

Difficulties in inferencing have also been shown in other populations who

[1] Bowyer-Crane & Snowling (2005) referred to these inferences as knowledge-based and elaborative, respectively. For clarity sake, terminology will be kept consistent throughout

struggle with reading comprehension. McClintock et al. (in press) compared the inferencing abilities of typical-language developing (TLD) students to those with specific language impairments (SLI). Students with SLI suffer from language acquisition difficulties, and are more likely to experience problems with reading comprehension. Both groups of children read silently to themselves while listening to an audio-recording of a story. They were asked questions after either completing a think-aloud condition (which allowed them to communicate their understanding as they read) or a control condition (which was an uninterrupted reading). In assessing responses to literal and inferential questions asked following the story, the inferences of the SLI group were much less accurate than those made by the TLD group. Children in the SLI group also made fewer informational and causal statements than the TLD group during the think-aloud. Thus it appears that when inferencing is impaired, so too is reading comprehension.

Sources of inference-failure. This pressing issue has led researchers to examine which factors are involved in children's failure to generate inferences. Cain & Oakhill (1999) studied inference generation and comprehension failure using three groups of children: skilled and less-skilled comprehenders, who were 7-8 years old and had equal levels of reading accuracy and sight vocabulary, and a comprehension-age match (CAM) group who was younger (aged 6-7) but had comprehension levels equal to those of the less-skilled group. The oral vocabulary skills of the 7-8 year old group were also assessed. All participants were given stories to read out loud, which were followed by literal questions, and two sub-types of inference questions (text-connecting inference

questions[2] and informational inference questions[3]). Less-skilled comprehenders were not significantly poorer at answering literal questions when the text was not available, demonstrating that they did not have trouble recalling the text. Skilled comprehenders, however, performed better on both types of inferential questions without access to the text. Memory was thus ruled out as a source of inference-failure, as it seems that poor-comprehenders are not distinctly different in their memory for the text, but in their inference-making abilities. It is important to note however, that the CAM group was able to make text-connecting inferences without textual support, which suggests that less-skilled comprehenders' understanding is likely impaired by inferencing problems and not vice versa. Furthermore, literal recall scores did not predict variance in students' reading comprehension scores, whereas oral vocabulary and both types of inference questions did. Encouragingly, when less-skilled comprehenders were provided with the text and given clues as to where to find the pertinent information, their inference-generation improved, however not to the extent that it was on par with the good comprehenders.

In a later study, Cain et al. (2001) investigated other potential causes of inference-failure in children. Specifically, general knowledge was controlled to determine its role in children's abilities to generate correct inferences. Children aged 7-8 were grouped into either a skilled or less-skilled comprehenders group, which were matched for word-reading accuracy and age. Participants were taught about a fictional planet until perfect recall was established, and were then read a six-episode story. Following each episode, literal and inferential questions were asked, and at the end of all six, knowledge recall

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[2] Text-connecting inferences require a reader to associate a "non-specific noun to a later, more specific, referent, e.g. drink and orange juice." (Cain & Oakhill, 1999, p.491).
[3] Cain & Oakhill (1999) referred to these inferences as gap-filling inferences. For clarity sake, terminology will be kept consistent throughout this proposal.

was retested. Both groups learned the knowledge base without difficulty, but good comprehenders were able to learn it slightly faster and demonstrated higher levels of retention after a weeklong period. Short-term memory did not differ significantly between the two groups of readers, leading the authors to conclude that good comprehenders may be stronger at both acquiring novel information and developing a solid understanding of what they have read. Of particular interest to the current study, good comprehenders generated far more inferences than less-skilled comprehenders. General knowledge was thus ruled out as a source of inference-failure, as all participants mastered the knowledge base but less-skilled comprehenders clearly struggled to make inferences.

A possible reason for less skilled comprehenders' initial difficulty in generating inferences in Cain & Oakhill's study (1999) might have been their approach to reading, which was primarily decoding based. This implies that the attention of the less-skilled comprehenders is largely devoted to reading the words accurately, as they may see the goal of reading as reading fluently without making mistakes (Adams, 1994). Good comprehenders, on the other hand, continually monitor their comprehension and make efforts to create a logical representation of the text. This may also be reflected in Cain et al.'s (2001) study, as they acknowledge that inability to retrieve relevant evidence in the text was a hindrance to inferencing in less-skilled comprehenders. These students failed to integrate the information necessary to infer correctly, which is perhaps a result of inadequate monitoring. It is thus plausible that using questions to direct students' attention to inferential content may scaffold their abilities to generate a better representation of the text, and hence increase their overall reading comprehension.

Causal implications of inference-failure. Beyond determining correlations between inferencing and comprehension, several studies support the notion that inferencing is *causally* linked to reading comprehension (Cain & Oakhill, 1999; McGee & Johnson 2011; Oakhill, 1982; Yuill & Oakhill, 1988). For example, Yuill & Oakhill (1988) studied groups of good and poor comprehenders who were matched for age (7-8 years old) and decoding accuracy, but differed in comprehension skill. They were assigned to one of the following training types: inference skills, comprehension exercises, or rapid decoding. Children in the inference group were trained on inferencing, question generation, and prediction. Those in the comprehension group were asked both literal and inferential questions about a text they read. Lastly, children in the rapid decoding group were given a list of words to practice reading and their reading times were then recorded. Results revealed that inference training was of greater help than decoding exercises for less skilled comprehenders, and this advantage was greater for this group than for skilled comprehenders. Less skilled comprehenders trained in inferencing also improved slightly more than those given comprehension exercises, however the difference was not significant. Strikingly, Neale comprehension ages of less skilled comprehenders in the inference-training group increased on average by 17 months, and 69% of the children in this treatment were identified as good comprehenders at post-test compared to only 23% in the other treatment groups.

McGee & Johnson (2011) conducted a similar study that involved training for children between the ages of 6-9 years old, classified as either poor or skilled comprehenders. The two groups had similar decoding skills, but children with comprehension scores below chronological and at least six months below decoding

scores were defined as poor comprehenders, whereas those with comprehension levels exceeding their chronological age were defined as skilled comprehenders. Over a three-week period, one group received inference training while the other received comprehension exercises without any direct instruction in inferencing. While both groups improved in comprehension, poor comprehenders who received inference training showed a significant increase of 15 months in comprehension age, compared to a nine-month increase by those in the comprehension exercise group. Moreover, 70% of the less-skilled comprehenders trained in inferencing later qualified as good comprehenders, however the same was true for only 40% of less-skilled comprehenders trained in comprehension exercises.

The experimental training studies summarized above clearly reflect that inference training proves to be advantageous in fostering overall reading comprehension in poor comprehenders, in certain cases, above other types of training in reading components. Therefore, classroom practices that improve children's inferencing abilities may result in enriched comprehension.

Using Questions to Enhance Text Comprehension

The types of questions children are asked have been shown to have a profound impact on students' comprehension scores (Keenan & Betjemman, 2006) thus, teachers should be well versed on the different classes of questions. Paor, Tansey, & Martin-Chang (2013) surveyed 81 teachers and found that 55% of questions they generated about a children's text targeted literal, as opposed to inferential, information. Although inferencing has been found to be highly correlated with reading comprehension, it seems that teachers still target factual information when asked to generate questions.

It remains unclear if questions targeting inferential information can scaffold children's overall text comprehension. Past research in this area has revealed contradictory findings. For example, Sundbye (1987) found that asking third-grade children inference questions *during* story-reading was equally as successful at enhancing comprehension as having the targeted information explicitly stated within the text. That is, children exposed to either inference questions about characters' relationships, goals, and motivations, or text that literally stated this information, produced similar levels of comprehension. This highlights the powerful role inferencing questions can play in shaping a child's understanding of a story. However, Sundbye did not distinguish between types of inference questions being asked, leaving it unclear whether particular questions were more beneficial than others.

Contrary to Sundbye's findings, when a sample of 60 fourth grade students were given inferential questions targeting causal relationships either during or after reading, it was found that their comprehension deteriorated (van den Broek et al., 2001). The authors posited that the cognitive demands young readers face during the reading process, including decoding, syntax processing, and comprehending, in conjunction with answering questions, may strain their working memory. Furthermore, they suggested post-reading questions might interfere with consolidation and solidification of the text.

Interestingly, McMaster et al. (2011) later conducted a study with a sample of 246 fourth-grade students who were exposed to either one of two inferential questioning interventions (general or causal) or to a literal questioning intervention. Children received training in their according question condition for a nine-week period. General inference questions prompted children to connect story parts by asking, "How does this sentence

relate to something you previously learned in the text?" while causal inference questions specifically asked about causal relationships between events or facts in the story. The literal question approach had readers answer questions with information explicitly stated in the text. Following the intervention, children were given two stories to read out-loud, and while reading, they were asked questions according to their assigned condition. Students' comprehension was then assessed through story retells, during which time they were not permitted to access the text. Comprehension improved amongst all groups following the intervention, however the type of questioning did not play a significant role for all participants. When further examining the impact of specific inferencing questions among less-skilled readers however, significant differences emerged. Causal inference questions appeared most beneficial for children who tended to make inaccurate inferences, whereas general inference questions assisted those who initially made fewer inferences.

It is clear from the variety of outcomes in studies surrounding inferencing questions that there is not yet a general consensus as to which types of questions best foster comprehension. However, the different results could be a reflection of how the questions were constructed.

Embedded Inference Questions. In a recent study (Paor et al., 2013) it was found that inference questions can be written in two different ways. One way is to have students to generate the inference (e.g., "Why did the woman slam the door?" – *Because she was angry).* A second way is to generate the inference for the students, and have them confirm or disconfirm it using factual information from the text (e.g., "Do you think the woman was angry? How do you know?" – *Yes, because she slammed the door*.) The

second manner of questioning results in an 'embedded inference question'. These seem to be midway point between a question that requires the child to draw an inference, and a literal question that can be answered straight from the text. Paor and colleagues noted that when teachers asked inferencing questions, 37% were embedded inference questions. Embedded inference questions could be affecting the students in one of two ways. They could be providing extra support for students' comprehension development by giving them access to inferences that they would not be able to answer themselves. Conversely, because the children are asked to respond with factual information, this type of question could be orienting the children towards the literal content of the text. Previous studies have not made the distinction between questions that require children to generate inferences and embedded inference questions, which could be influencing the outcomes of the studies.

The Present Study

There is now a substantial body of evidence linking inference-making to reading comprehension (Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999; Cain et al., 2001; McClintock et al., in press; Nation, 2005; Nation & Snowling, 1997; Oakhill & Cain, 2012; van den Broek et al., 2013; van den Broek et al., 2001; Van Kleeck, 2008; Yuill & Oakhill, 1988). Therefore, interventions targeting students' inferential skills merit investigation as an avenue to improving textual understanding. Many researchers have used inferencing questions as a *measure* of comprehension (Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999; Cain et al., 2001; McClintock et al., in press; Sundbye, 1987) however few studies have looked at the questions themselves as a potential *tool* for cultivating comprehension. Furthermore, to date, no studies have

investigated the impact of embedded inference questions on students' meaning making.

Therefore, the goal of the present experiment is to determine if differential outcomes arise when readers are presented with systematically varied comprehension questions. The investigation was guided by two hypotheses. The first was that children would be most successful at answering literal detail questions in comparison to causal inference questions. It was unknown how children would respond to the embedded inference questions in comparison to the other question types, as this has not yet been studied. The second hypothesis was that children would display a more advanced story comprehension as a result of answering causal inference questions compared to literal detail questions. Furthermore, both question conditions were hypothesized to result in better story comprehension compared to not answering questions (control condition).

Method

Participants

Participants were recruited through letters to parents distributed amongst fifth and sixth grade students at an elementary school in southwestern Quebec, Canada. Twenty-seven students returned consent forms, signed by both themselves and their parent or guardian (See AppendixA). All students spoke English as one of their primary languages. One participant was suspended from school, and one student was removed due to non-compliance (e.g. copying answers). Therefore, the final sample consisted of 15 girls and 10 boys, who ranged in age from 10;5 (years; months) to 12;2 (*M* age= 11;5, *SD*= 6.92 months).

Research Design

A 4x1 within participant design was employed, where every participant was exposed to all four conditions. The main manipulation concerned the questions that followed the reading of a chapter. The four question conditions were: 1) Literal Detail; 2) Causal Inference 3) Embedded Inference; 4) No Questions.

The first dependent variable involved question response accuracy, as measured by how effectively children were able to answer the different classes of questions. The second dependent variable was story comprehension, as measured by how precisely children could summarize the chapter one day following the reading. In order to control for potential effects related to specific chapters (e.g., reading level, story enjoyment, length), the order of the conditions was counter balanced across participants, and the four question conditions were counterbalanced across the stories (see Appendix B for counter balance). The chapters were comprised of self-contained stories (each chapter possessed a

beginning, middle, and end) that were based on a common theme. They were administered to participants in the order they appear in the novel, however comprehension of one chapter did not depend on understanding subsequent chapters because each story could be read separately.

Materials

Standardized tests. The present study employed four subtests from the Woodcock Johnson III Battery (WJ-III; Woodcock, McGrew, & Mather, 2001), along with the Peabody Picture Vocabulary Test-4 (PPVT-4; Dunn & Dunn, 2006) in order to obtain information regarding students' word reading and decoding abilities, reading comprehension, memory, and receptive vocabulary breadth.

Word reading. The WJ-III Letter Word Identification was used to assess students' reading skills. Letter Word Identification requires participants to read words orally, which gradually increase in difficulty. Students are awarded one point for every correct answer, for a total possible score of 76. Testing is discontinued when a participant makes six consecutive errors. The subtest shows a strong internal consistency reliability of .94 (Woodcock et al., 2001).

Decoding. The WJ-III Word Attack was used to assess students' decoding skills. In this task, students are presented with nonsense words to read aloud, which gradually increase in difficulty. Students are awarded one point for every correct answer, for a total possible score of 32. Testing is discontinued when a participant makes six consecutive errors. The subtest shows a strong internal consistency reliability of .87 (Woodcock et al., 2001).

Reading comprehension. The WJ-III Passage Comprehension test was used to

assess students' reading comprehension. A cloze procedure is used, in which students supply a crucial word that was removed from a passage. The passages are read by students with no assistance from the experimenter, and gradually increase in difficulty. Students are awarded one point for every correct answer, for a total possible score of 47. Testing is discontinued after six consecutive errors. The internal consistency reliability of this subtest is .88 (Woodcock et al., 2001).

Working memory. The WJ-III Numbers Reversed was used to provide a measure of the participants' working memories. In this task digits are read aloud to a student by an examiner, beginning with two digits (e.g., 5, 2). The digits are then repeated back by the student in reverse order (e.g., 2, 5). As the test progresses, digits are added one at a time to a maximum of eight digits. Students are awarded one point for every correct answer, for a total possible score of 30. Testing is discontinued after three consecutive errors. The internal consistency reliability of this subtest is .87 (Woodcock et al., 2001).

Vocabulary breadth. The PPVT-4 is a norm-referenced standardized test appropriate for ages 2 to 90. It is designed to measure receptive vocabulary of both children and adults, and shows an internal reliability of .93 (Dunn & Dunn, 2006). The PPVT-4 was administered to participants in order to evaluate their receptive vocabulary. In this task the student is asked to point to one of four images in order to correctly identify a word orally supplied by the examiner. Students are awarded one point for every correct answer. There are 228 items in this measure, and testing stops after 8 consecutive errors in a set containing 12 items.

Experimental Materials

Chapters. A children's chapter book entitled *The Strange Case of Origami Yoda*

by Tom Angleberger was selected as the reading material for this study. It is the winner of the *2013 Sequoyah Book Award*, as well as the *2011 Notable Children's Books in the English Language Arts*. The novel has been translated into ten languages. The preface and the following four chapters of the story were included in this study: 1) *Origami Yoda and the Night of Fun*; 2) *Origami Yoda and the Homerun*; 3) *Origami Yoda and Shakespeare's Head*; 4) *Origami Yoda and the Cheeto Hog* (see Appendix C for stories). The chapters range in length from 1327 to 1811 words (M=1491, SD= 218). The Flesh-Kincaid Grade Level for the chapters range from grades 3 to 4. (M=3.7, SD= .49*).* The highest rated Flesh-Kincaid Grade Level for these chapters (grade 4) is more than a full grade level below participants' actual school grade, increasing the likelihood that texts were within the children's independent reading level.

Question conditions. Eighteen questions were written per chapter. The questions were divided into the three experimental conditions (Literal Details, Causal Inferences, Embedded Inferences). A fourth control condition was created in which students were provided with materials and instructions for an art project related to the novel (see Appendix D for questions conditions for each story). For the Literal Detail condition, questions were created that addressed information that was explicitly stated in the text. They focused on less significant features or nuances in the story, such as the names of minor characters. For the Causal Inference condition, questions were written that focused on 'how' or 'why' story elements were related. The answers to these questions were not stated in the text, and instead needed to be inferred by the participants. Finally, for the Embedded Inference condition questions were written that included an inference that was generated within the question itself. To answer the question, the student is required to

confirm or disconfirm the inference using literally stated information. In all three experimental conditions, the questions were printed 8x11 pages with lines between each question for the children to write their responses.

A rubric was created to score each participant's question response on a scale of 0-4, for a possible total score of 24 points (4 x 6 questions) (see Appendix E for scoring rubric). A score of 0 was given for blank or incorrect responses. A score of 1 was given for a response that was minimally correct. A score of 2 was given for partially correct responses. A score of 3 was given for correct responses that were well supported but not fully complete. A score of 4 was given for correct responses that were complete and very well supported. This score was divided out of 24 in order to convert the total into a percentage. Following the initial scoring, a second researcher scored 20% of the answers for each question type, and interrater reliability was conducted to determine consistency among raters.

Story comprehension. In order to measure students' story comprehension, the children were asked to retell the chapter they had read to a graduate student. Each retell was recorded using an iPhone4, and later transcribed verbatim for coding purposes. A retell checklist for each of the four stories was created to serve as a measure of story comprehension (see Appendix F). Each checklist contained either main ideas or details from the passage. Children were given one point for every item they stated during the retell. The scores were transformed into percentages by dividing the number of story propositions retold by the total number of passage ideas.

Procedure

Standardized tests. All standardized testing was carried out individually by a

trained graduate student in accordance with the instruction manuals. To minimize student fatigue, testing was carried out in two sessions. In the first session, students completed the WJ-III Letter Word Reading, Passage Comprehension, and Word Attack. The completion of all three tasks took approximately 10-15 minutes. In the second session, students completed the PPVT-4 and the WJ III-Numbers Reversed. The completion of the final two tasks took approximately 15-20 minutes.

Experimental conditions. Each experimental condition was conducted in two phases. The first phase involved the students reading the chapter and answering the relevant questions or completing art project. Phase 1 was conducted with the whole class, except in those instances in which a participant was absent. Phase 2 took place the following day. Here, a graduate student worked one-on-one with each participant and recorded them as they summarized the story.

During the first experimental testing session a graduate student explained to the class that they would be reading a short story from a book once a week over a four-week period. She then read the students the preface of the book. This ensured that all students had access to the same amount of background knowledge of the text, such as knowledge of the main characters (e.g., Origami Yoda, Mike, and Dwight) and the motivation of the book (to determine if Origami Yoda was "real"). The title of the book was also introduced to students, and they were asked not to read the book until the study was finished (see Appendix G for script).

Following the preface, students were asked to read the first chapter silently and told that each time they finished reading a chapter, they would have a different activity to complete. They were given an envelope that they were only permitted to open upon

completion of the reading, in order to increase the likelihood that they read the chapter from beginning to end. Each envelope contained a sheet with six questions from one of the three question conditions or materials and instructions on how to create their own Origami Yoda. Students answering questions were given access to the text, as the purpose was not to test for memory, but to verify whether or not questions would direct attention to the targeted information. It was communicated to children that spelling did not count.

The day immediately following the reading and questions, participants met individually with a graduate student. They were prompted to summarize the chapter they had read with the following cue, "We are going to talk about the story you read yesterday, Origami Yoda and (corresponding title). I want you to pretend you are telling the story to a friend who was absent yesterday. What do you remember? Once students stopped talking or indicated that they were finished, they were asked, "Is there anything else you would like to add?" If students answered 'no', the retell session ended immediately, however if students answered 'yes', they could add to their retell before ending the session.

Results

Descriptives

The means and standard deviations for performance on all standardized tests and the experimental measures are displayed in Table 1. Standardized tests from the Woodcock Johnson III (WJIII: Word-Attack, Letter-Word Reading, Passage Comprehension) were administered to assess the general reading aptitudes of the current sample. In addition, working memory (WJIII Numbers Reversed) and vocabulary (PPVT-4) have been raised as potential variables of interest in previous reading comprehension studies, and therefore standardized tests of these abilities were also evaluated. In order to assess the relationship between experimental measures (comprehension questions and retell scores) and the standardized measures, a correlational analysis was conducted.

As can be seen in Table 1, the three Woodcock Johnson reading subtasks (Word Attack, Letter Word Reading, and Passage Comprehension) were all positively correlated. WJ-III Passage Comprehension was also positively correlated with working memory as measured by the WJIII Numbers Reversed, and with vocabulary as measured by the PPVT-4.

Turning to the experimental measures, the children's comprehension question score composite (sum of scores from all three question conditions/3) was positively correlated with all other measures; moderate correlations were observed between children's question scores and their WJ-III decoding (Word Attack), Letter Word Reading, and working-memory scores. Strong correlations were observed between children's question scores and their vocabulary (PPVT-4), and with their WJ-III Passage Comprehension. Finally, children's retell score composites (sum of retell scores from all

four experimental conditions/4) were moderately positively correlated with WJ-III Letter Word Reading, and strongly positively correlated with WJ-III Passage Comprehension, and vocabulary (PPVT-4). Of particular interest, the two experimental measures, children's comprehension question scores and retell scores were strongly positivity correlated.

Table 1

Descriptive statistics and correlation coefficients

Variable	1	2	3	4	5	6	7
1. WJIII Word Attack (Decoding)	-						
2. WJIII Letter Word Reading	.679**	-					
3. WJIII Passage Comprehension	.354*	.485**	-				
4. WJIII Numbers Reversed (Working Memory)	-.075	.157	.523**	-			
5. PPVT-4 (Vocabulary)	-.035	.221	.500**	.132	-		
6. Retell Score Composite[a]	.175	.371*	.568**	.245	.652**	-	
7. Question Score Composite[b]	.390*	.382*	.596**	.341*	.529**	.661**	-
Mean	97.60	97.96	84.52	97.00	101.64	29.00	68.57
SD	7.84	9.32	5.68	16.15	12.29	11.77	14.70
Range	66-123	84-125	80-96	82-118	79-130	9-53	43-92

*p <.05; ** p <.01

[a] Average retell score as shown as percentages across all four retell conditions

[b] Average question score as shown as percentages across all three question conditions

Question Scores

The first hypothesis addressed how effective children were when answering literal detail questions in comparison to causal inference questions, and to observe how successful they were when given embedded inference questions in relation to the other two question types. The interrater reliability for question scores was .94 (95% CI [.88, 1.00], $p < .001$, agreement rate = 94%). The mean percentage and raw scores, standard deviations, and ranges for each question condition are displayed in Table 2. A within-participant, repeated measure of analysis of variance (ANOVA) confirmed a significant effect of question type $F(2,48) = 36.90$, $MSE = 221.31$, $p < .001$, $\eta_p^2 = .61$. Post hoc analysis with Bonferroni correction in place showed that mean score for literal detail questions was significantly higher than that of the two other question types ($p < .001$). The mean scores for causal inference and embedded inference questions did not differ significantly ($p = 1.0$).

Table 2

Mean question scores in percentages as a function of question type

Question Type	Mean	Raw Score	*SD*	Range
1. Literal Detail	89.44	21.47	15.17	50-100%
2. Causal Inference	58.44	14.03	21.59	4-96%
3. Embedded Inference	57.84	13.88	19.88	25-96%

Question enjoyment. After having completed each type of question, children were asked to assess how much they enjoyed answering the questions using a 10-point Likert scale. A score of 1 indicated the lowest level of enjoyment, while a score of 10 indicated the highest level of enjoyment. Table 3 presents the means, standard deviations, and

range for each question type. A within-participant, repeated ANOVA revealed a significant effect of question type $F(2,48) = 11.24$, $MSE = (28.17)$, $p < .001$, $\eta_p^2 = .32$. Post hoc analysis with Bonferroni correction in place showed that children enjoyed literal detail questions significantly more than both the causal inference questions ($p = .001$) and the embedded inference questions ($p = .01$). Enjoyment ratings of causal inference questions and embedded inference questions did not differ significantly ($p = .15$)

Table 3

Mean question enjoyment score as a function of question type

Question Type	Mean	SD	Range
1. Literal Detail	6.76	1.94	3–10
2. Causal Inference	4.64	2.30	1–10
3. Embedded Inference	5.6	1.83	2–9

Calibration between self-perception and question score. In additional to question enjoyment, students were also asked to assess the difficulty of each question type using a 10 point Likert scale, where a score of 1 represented low difficulty and a score of 10 represented high difficulty. Correlations were conducted in order to explore the relationship between students' perceived level of difficulty for each question type and their actual ability at answering the questions. The results are presented in Table 4. The strong negative correlation between children's difficulty rating of literal detail questions and their literal detail question scores showed that as children answered more questions correctly, their rating of difficulty went down. No significant correlations were observed between the students' perceived difficulty of the two other question types and their associated scores, which indicates that children's difficulty ratings were unrelated to their

actual ability to answer the questions correctly.

Table 4

Correlations between perceived question difficulty and question scores

Variable	Literal Detail Question Score	Causal Inference Question Score	Embedded Inference Question Score
Literal Detail Question Difficulty	-.615**	-	-
Causal Inference Question Difficulty	-	.09	-
Embedded Inference Question Difficulty	-	-	.07

**p <.01

Story Comprehension

The second hypothesis addressed whether children were better able to retell a story they had read the day before as a result of the types of questions they were given immediately after it was read. During the retell task, all children recalled as much of the story as possible, without any specific question prompts. Therefore, the conditions were defined by the questions that were answered the previous day. The means, standard deviations and range of the retell scores are presented in Table 5.

As can be seen in Table 5, the children seemed to be recalling more main ideas about the passages compared to details. Of particular interest to the current investigation, participants' retell scores were highest when they had been asked literal detail questions the day before, second highest when they had been given causal inference questions, third highest when they had been given embedded inference questions, and lowest in the control condition. This pattern was confirmed by a 2 (information recalled: main idea,

detail) x 4 (retell condition: literal detail, causal inference, embedded inference, control) repeated measure ANOVA with main effects of information retold ($F(1,24) = 178.49$, $MSE = (54.83)$, $p < .001$, $\eta_p^2 = .88$) and retell condition ($F(3,72) = 6.01$, $MSE = (49.53)$, $p = .001$, $\eta_p^2 = .20$). The Information Retold x Retell Condition interaction was not significant, indicating that the types of information recalled were similar across all conditions ($F(3,72) = .81$, $MSE = (35.04)$, $p = .49$, $\eta_p^2 = .03$).

Table 5

Mean retell scores in percentages as a function of retell condition

Retell Condition	Main	Details	Total
1. Literal Detail	23.24 (11.85)	11.12 (8.33)	34.36 (16.97)
2. Causal Inference	23.12 (9.20)	7.32 (6.26)	30.44 (14.05)
3. Embedded Inference	21.04 (10.17)	7.12 (6.60)	28.16 (15.11)
4. Control Condition	18.40 (9.01)	4.28 (4.98)	22.68 (11.68)

SD shown in parentheses

In order to determine where the differences lie within the retell conditions, post hoc analyses with Bonferroni correction in place were conducted on the total number of idea units retold. This revealed that the literal detail condition and the causal inference condition were both significantly higher than the control condition ($p = .006$, $p = .025$, respectively). However, the literal detail condition and causal inference condition did not differ significantly ($p = 1.0$). No other pairwise comparisons were significant (all p's $> .45$).

Correlational analyses were conducted between scores on each question type and students' corresponding retell scores. Results are presented in Table 6, and demonstrate a significant relationship among each question type and according retell condition. There was a strong positive relationship between children's literal detail question scores and literal detail retell scores, and between their causal inference question scores and causal inference retell scores. A moderate positive relationship was found between students' embedded inference question scores and embedded inference retell scores.

Table 6

Correlations between question score and retell score as a function of condition

Variable	Literal Detail Retell Score	Causal Inference Retell Score	Embedded Inference Retell Score
Literal Detail Question Score	.60**	-	-
Causal Inference Question Score	-	.63**	-
Embedded Inference Question Score	-	-	.36*

*p <.05 **p <.01

Predicting retell scores by question condition. To further explore the relationship between each question type and its specific contribution to children's retell scores, a series of hierarchical regression analyses were conducted. The regression model included WJ-III Letter Word Reading in the first step, followed by vocabulary (PPVT-4) in the second step, as these generally account for variance in children's story comprehension (Tunmer & Chapman, 2013). The third predictor variable differed in each hierarchical

regression analyses: 1) Literal Detail Question Score; 2) Causal Inference Question Score; 3) Embedded Inference Question Score. The dependent variable also differed for each analysis in order to look at how each particular question score was contributing to the retell of the corresponding question condition.

The results of the first hierarchical regression analysis are presented in Table 7. This revealed that children's performance on the WJ-III Letter Word Reading did not explain the variance in retell scores in the detail condition. However, the PPVT-4 vocabulary scores accounted for an additional 27% of the variance, and the detail question score accounted for an additional 18%.

Table 7

Hierarchical regression analysis summary for variables predicting performance on retell score in the detail question condition

Step and predictor variable	*B*	*SE B*	β	R^2	Δ R^2
Step 1:				.06	
Letter-Word Reading[a]	.07	.29	.04		
Step 2:				.34	.27**
PPVT-4[b]	.57	.22	.41*		
Step 3:				.52	.18*
Detail Question Score[c]	.51	.18	.46*		

*p <.05 **p <.01 [a]df = 1, 23 [b]df =1, 22 [c]df = 1, 21
Note: All β values from final model

The second hierarchical regression analysis is presented in Table 8. Here, the dependent variable was the retell score in the causal inference condition. Once again, WJ-III Letter Word Reading was entered in step one followed by PPVT-4 in step two, however here the causal inference question scores were entered in the final step. The WJ-III Letter Word Reading again did not explain the variance in retell scores during the

causal inference question condition, however vocabulary as measured by the PPVT-4 accounted for 28%. Causal inference question scores did not explain any unique variance in the retell scores during the causal inference question condition, once Letter Word Reading and vocabulary had been accounted for.

Table 8

Hierarchical regression analysis summary for variables predicting performance on retell score in the causal inference question condition

Step and predictor variable	*B*	*SE B*	β	R^2	Δ R^2
Step 1:				.13	
Letter-Word Reading[a]	.36	.26	.24		
Step 2:				.41	.28**
PPVT-4[b]	.60	.21	.53*		
Step 3:				.41	.00
Causal Inference Question Score[c]	.03	.12	.04		

*p <.05 **p <.01 [a]df = 1, 23 [b]df =1, 22 [c]df = 1, 21
Note: All β values from final model

Table 9 demonstrates the final hierarchical regression in which the dependent variable was the retell score in the embedded inference condition. Once again, WJ-III Letter Word Reading was entered in step one followed by PPVT-4 in step two, however the embedded inference question scores were entered in the final step. Not a single variable in this model accounted for variance in the retell scores of the embedded inference question condition.

Table 9

Hierarchical regression analysis summary for variables predicting performance on retell score in the embedded inference question condition

Step and predictor variable	*B*	*SE B*	β	R^2	Δ R^2
Step 1:				.27	
Letter-Word Reading[a]	.60	.31	.37		
Step 2:				.35	.08
PPVT-4[b]	.24	.24	.20		
Step 3:				.39	.03
Embedded Inference Question Score[c]	.18	.17	.23		

[a]*df* = 1, 23 [b]*df* = 1, 22 [c]*df* = 1, 21
Note: All β values from final model

Discussion

The first goal of the present study was to determine if differential outcomes arise when readers are presented with systematically varied comprehension questions. The data presented here replicate previous studies by demonstrating that children score significantly higher on literal versus inferential questions (Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999). When children were asked about information that was stated in the text, their average score was just below 90%, whereas when *the same children* were asked about causal inferences, their average score fell to 58%. Therefore, it is crucial that teachers understand the difference between literal and inferential information because in testing situations, the success of the children seems to be partially determined by the types of questions the teacher elects to include.

The data reported here also extend the literature by documenting the success rates of children when they are presented with embedded inference questions. This is an issue that carries both practical and theoretical implications. From a theoretical standpoint, embedded inference questions mark an interesting middle ground between inferencing and factual questions. Specifically, students must understand the inferences that are included in the question but answer with factual information listed directly in the text. Therefore, it was unclear whether the children's scores would more closely resemble the factual detail questions or the causal inferencing questions. Remarkably, the average score on the embedded inference questions (58%) was identical to the average score observed on the causal inference questions, and substantially lower than those on the literal detail questions. This suggests that simply requiring children to both understand an inference and to support it with evidence found in the text are equally challenging tasks.

From a practical standpoint, previous research has shown that 37% of inference questions written by teachers fall into this category (Paor et al., 2013), therefore it is important to understand how these questions impact students' comprehension scores.

Many differences were documented between the three experimental question conditions. As discussed above, the children scored higher on the literal detail questions. In addition, they rated them as more enjoyable to answer than the causal inference and embedded inference questions, which did not differ. Beyond liking literal detail questions more than any other question type, students also perceived them as easiest to answer. When examining the relationship between students' perceived level of difficulty with each question type and how well they did on the questions, it seems that they were able to properly calibrate their abilities on the literal detail questions. That is to say the higher the children scored, the easier they rated the questions. The same cannot be said for the causal inference and embedded inference conditions. Children did not seem to be capable of correctly assessing the difficulty they experienced with these questions, as evidenced by the lack of association between questions scores and difficulty ratings. This may be because children felt more assured with the literal detail questions, which drew on verbatim information from the text. Children may have been able to verify their answers, and thus felt more capable of gaging whether or not they are correct.

The final goal of the current investigation was to determine whether children would display superior story comprehension as a result of answering different types of questions. 'Reading comprehension' is an elusive construct to measure. Therefore, teachers and researchers alike tend to rely on comprehension questions as an index of textual understanding, however, this runs the risk of confounding the construct

(comprehension) with the measure (responses to questions). Indeed, had the analysis of the current study ended here, it would have been concluded that the sample has weak inferencing skills, and thus low levels of text comprehension. This study makes an additional contribution to the literature by measuring comprehension beyond children's performance on questions, in an attempt to understand whether the questions themselves could be influencing comprehension.

Based on prior links made between reading comprehension and causal inferences (Cain & Oakhill, 1999; McGee & Johnson 2011; Nation, 2005; Oakhill, 1982; Yuill & Oakhill, 1988), it was hypothesized that asking children causal inference questions would lead them to generate superior story retells compared to when they were asked literal detail questions. Furthermore, it was hypothesized that all three experimental conditions (literal detail, causal inference, embedded inference) would enhance story comprehension compared to being asked no questions at all (control). However, unexpectedly, the retells children produced when asked literal detail questions were just as strong as when they were asked causal inference questions.

During a retell task, a perfect score of 100% would be neither ideal nor expected because it would entail the verbatim recall of the story. On average the students were recalling 34% of the story in the literal detail condition and 30% in the causal inference condition, which represents a good quality summary of the chapter (see Appendix H for sample of high and low scoring retells). While these two conditions targeted very different information, drawing attention to the causal inferences in the story did not appear to be more beneficial to comprehension than focusing on literal details. Furthermore, these two question types were both more useful to students than not having

been asked any questions at all. When the children were in the embedded inference condition, they recalled on average 28% of the stories. Although these questions seemed to result in superior recall compared to the control condition (23%), the two were not significantly different. This was not anticipated, as embedded inference questions also highlighted causal inferences from the text.

These findings may help explain inconsistencies in past research pertaining to the effects of inferencing questions on students' reading comprehension. The current study demonstrated that the manner in which inference questions are worded exerts influence on students' reading comprehension, however previous studies in this area have not clearly identified the types of inferencing questions under investigation. For example, van den Broek et al. (2001) reportedly asked students inference questions, but did not specify what types of inferences were targeted. McMaster et al. (2011) looked at both causal and general inference questions, and Sundbye (1987) looked only at inference questions about causal relationships. All three studies did not clarify whether students were being asked questions that were embedded with inferences, however the present study demonstrated that such questions lead to differential outcomes when compared to casual inference questions.

Beyond proper question classification, there are other potential reasons that results from the current study differ from those previously mentioned. The current sample was made up of average comprehenders, which stands in stark contrast to the majority of the research in this domain, as it tends to focus on students with low comprehension levels. Perhaps the high levels of recall after the literal detail condition indicates that average comprehenders generate the same number of inferences regardless of the

information being targeted by the questions. This is inline with research by McMaster et al. (2011), who found that questions specifically benefitted children struggling with comprehension, and not students with average or good comprehension skills. However, the fact that retells were better after two of the question conditions (literal details and causal inferences) than the control condition makes this notion seem unlikely.

A second possible reason that the literal detail and causal inference questions may have equally impacted the retell scores lies in the act of searching for the answers, which may have encouraged the students to re-read the text. Repeated reading has been acknowledged as an effective method to improve student comprehension, particularly when comprehension questions are used to cue the re-reading process (Therrien, 2004). Rather than the questions enhancing understanding, it is possible that children revisited the text to search for specific answers to the literal detail questions or to properly determine the inference needed to answer the causal inference questions. If this was the case, greater text exposure may have enabled students to create a more structured mental representation of what was read (Kintsch, 1988). Support for this concept comes from the fact that the retells were less accurate in the embedded inference condition, where the children could respond to the question by simply agreeing with or refuting the inference made in the question (e.g., *Was Henry embarrassed by Dwight?* vs. *How did Henry feel about Dwight?*). Indeed, the children's answers to embedded inference questions sometimes suggested that they were attempting to answer from memory despite of the fact that the questions also prompted them to use textual support in their answers (e.g., *How do you know*?). For example, on several occasions children's incorrect answers showed evidence of referring to the wrong part of the chapter, regardless of the fact that

the page number on which the answer could be found was provided in the question. This points to the possibility that very little re-reading was done while answering questions in this condition. Further support comes from the fact that once children had completed reading the text in the control condition, where retell was the lowest, they started the art activity immediately, which did not require them to revisit the text at all.

Another possible reason that the causal inference questions and the literal detail questions may have resulted in similar retell scores is that the text used in the current study differed from those generally used in most comprehension question research. These tend to be passages that are fabricated specifically for the study, rather than authentic children's texts (Bowyer-Crane & Snowling, 2005; Cain & Oakhill, 1999; Cain et al., 2001; McClintock et al., in press; Nation & Snowling, 1997; Oakhill & Cain, 2012; van den Broek, 2001 van den Broek et al., 2013). One may speculate that the types of inferences found in experimentally designed stories may be deliberately made essential for comprehension, whereas those found within real texts are perhaps not as crucial. It is possible that in authentic texts, such as the one used by the current study, authors writing for a younger audience purposefully explain the significant story elements in literal language to assure that children properly grasp the story.

The fact that only the literal detail questions helped explain unique variance in retell scores was surprising. While literal story details are not closely linked to overall story comprehension (Kintsch, 1994), it is conceivable that having highlighted some of these details through questions granted students access to important information during their retells. For example, one story included a class fieldtrip to the zoo in which the major initiating event occurs. A literal detail question for this story asked where the class

went on their fieldtrip. Remembering the answer ‘zoo’ perhaps cued the recollection of the initiating event. Therefore, literal details, while not necessary to understand a story, may nevertheless provide links to more relevant information.

Lastly, it is important to acknowledge that while students scored substantially higher on the literal detail questions (89%) compared to the causal inference questions (58%), this discrepancy was not reflected to the same degree in their retell scores (34% and 30%, respectively). This raises the question of whether increasing students’ scores on causal inference questions could lead to proportionally higher retell levels. While work remains to be done in this area, it is perhaps telling that children also scored 58% on the embedded inference questions, however their retell scores were no different from having been asked no questions at all. Furthermore, children were strictly asked about story details in the literal detail condition, yet they remembered the same amount of main ideas as when they were in the causal inference condition. Therefore it is unlikely that raising performance on the causal inference questions would markedly improve children’s retell scores.

Limitations and Future Research

This study was unique in its approach for several reasons. For example, it focused on the skills of children with average comprehension skills, whereas the vast majority of studies in this area are aimed at poor comprehenders. This methodological difference makes it difficult to compare the data reported here with the other work done in this area.

Some past studies incorporating retells have included guided prompts. For example, they may begin by asking the student ‘What is the main idea of the story?’ (Westby, Culatta, Lawrence, & Hall-Kenyon, 2010), however during the current study,

the decision was made not to give children specific prompts. Rather, children were asked to retell the story as if talking to a friend who had never read it before (Sundbye, 1987). Therefore, it is difficult to determine if students covered everything that they understood about the story during the retell sessions. Perhaps using certain cues, such as asking how the story began or how it ended, would have revealed that students understood more than they discussed. By the same token, asking questions during recall, even general ones, may influence the amounts or types of information reported during the retell.

Furthermore, the chapters were only removed from the students once they completed the questions, therefore some children may have had longer time with the text than others. This study did not take into account the number of times the story might have been re-read by students, which is speculated as a potential reason for higher retell scores. Future studies should examine if questions are leading children to repeatedly read parts of the texts, and consequently enhance their understanding of what has been read. This could be accomplished by either having the story removed from students before they move onto the questions, thereby eliminating repeated readings, or by using eye-tracking technology to monitor the number of times the children are re-reading the text.

Moreover, given the feasibility and time constraints of working with elementary students, the current study was only able to look at three question types, however multiple question types have been identified in the literature. The question categories included in this experiment were those thought to result in the most extreme differences in comprehension (literal detail vs. causal inferences), and a novel question type (embedded inferences) that had not yet been investigated. However, integrating a wider range of question categories might provide a better understanding of the role other

questions play in fostering comprehension. In particular, given the outcome of the literal detail condition, literal main questions, which ask about main ideas explicitly stated in the text, merit further investigation. Additionally, based on students' vocabulary scores explaining variance in the literal detail and causal inference retell conditions, questions targeting vocabulary also warrant further attention. Such questions would have children define unfamiliar vocabulary words found in the text. Clarification of these words may enhance readers' mental representation of the passage, particularly if their meanings are necessary to understand main elements of the story (Kintsch, 1994). For example, in the chapter '*Origami Yoda & Shakespeare's Head'*, the term 'sentimental' is used to describe an object. Students not knowing the meaning of the word 'sentimental' may have trouble understanding why the object breaking presents a problem for the main character.

Lastly, because this study incorporated authentic children's stories, rather than passages designed solely for research purposes, these findings may be more difficult to compare to others in this area. However, they hold greater face validity because they are the types of texts that children actually select to read, and as such, encounter on a regular basis.

Implications

Several educational implications can be derived from the current study. First, teachers should be cautious about the measures they employ to assess their students' reading comprehension. Conventional classroom practices tend to heavily rely on questions to test students' textual understanding, however as demonstrated by the current study, there is a discrepancy between students' abilities to successfully answer these questions and their comprehension level. Using question scores as the sole indicator of

students' comprehension may therefore falsely represent their abilities in this domain; if asked only literal detail questions, it may over represent how much children are understanding from the text, and in contrast, asking exclusively inferencing questions might under represent children's abilities.

While questions should not be used exclusively as a measure of comprehension, certain questions are evidently beneficial to children. Teachers should become familiar with identifying the types of questions they present to students, and make use of both literal detail and causal inference questions, as these result in better retell scores. Embedded inference questions, on the other hand, appear to have an impact equal to that of having asked no questions at all, and should therefore be avoided.

Although speculative, several lines of evidence suggest that revisiting the text might be the mediating factor between the types of questions students were asked and success during the retell task. This hypothesis will need to be supported by empirical evidence before being fully endorsed, however in the meantime, it would be prudent for teachers to engage students in tasks that promote rereading the text. Answering literal detail questions, which students enjoy the most, may be a suitable place to start.

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Appendix A

Letter of Consent

CONSENT TO PARTICIPATE IN READING STUDY: INVESTIGATING LITERACY PROCESSES

This program of research is being conducted by Sabrina Tansey under the supervision of Dr. Sandra Martin-Chang of the Department of Education at Concordia University. Dr. Martin-Chang may be reached by phone at 514-226-6250 or email at smartinc@education.concordia.ca

A. PURPOSE

I have been informed that the purpose of the research is to investigate the impact of question on students' reading comprehension.

B. PROCEDURES

I understand that my child will be working both in a classroom setting and individually with a member of Dr. Martin-Chang's lab, and that he or she will be reading and retelling texts, and responding to comprehension questions. Audio recordings will be used for scoring purposes. My child's name will not be associated with the audio recordings and they will be kept strictly confidential.

C. RISKS AND BENEFITS

There are no risks associated with this study. The potential benefits include:

a. Exposure to new reading material.
b. Opportunities to practice responding to comprehension questions and summarizing texts.
c. Adding to the scientific understanding of how reading comprehension can be fostered in children.

D. CONDITIONS OF PARTICIPATION

I understand that my child is free to withdraw and discontinue participation at any time without negative consequences. I understand that my child's data will be kept strictly confidential and that his or her individual scores will not be analyzed or released. I understand that the group data from this study may be published for scientific purposes.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY

Name of Parent_____
Signature of Parent_____

Name of Child_____
Signature of Child_____

Age of Child_____
Birth Date of Child_____
Day/Month/Year

If at any time you have questions about your rights as a research participant, please contact Brigitte Des Rosiers, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x 7481, or by email at bdesrosi@alcor.concordia.ca

Appendix B

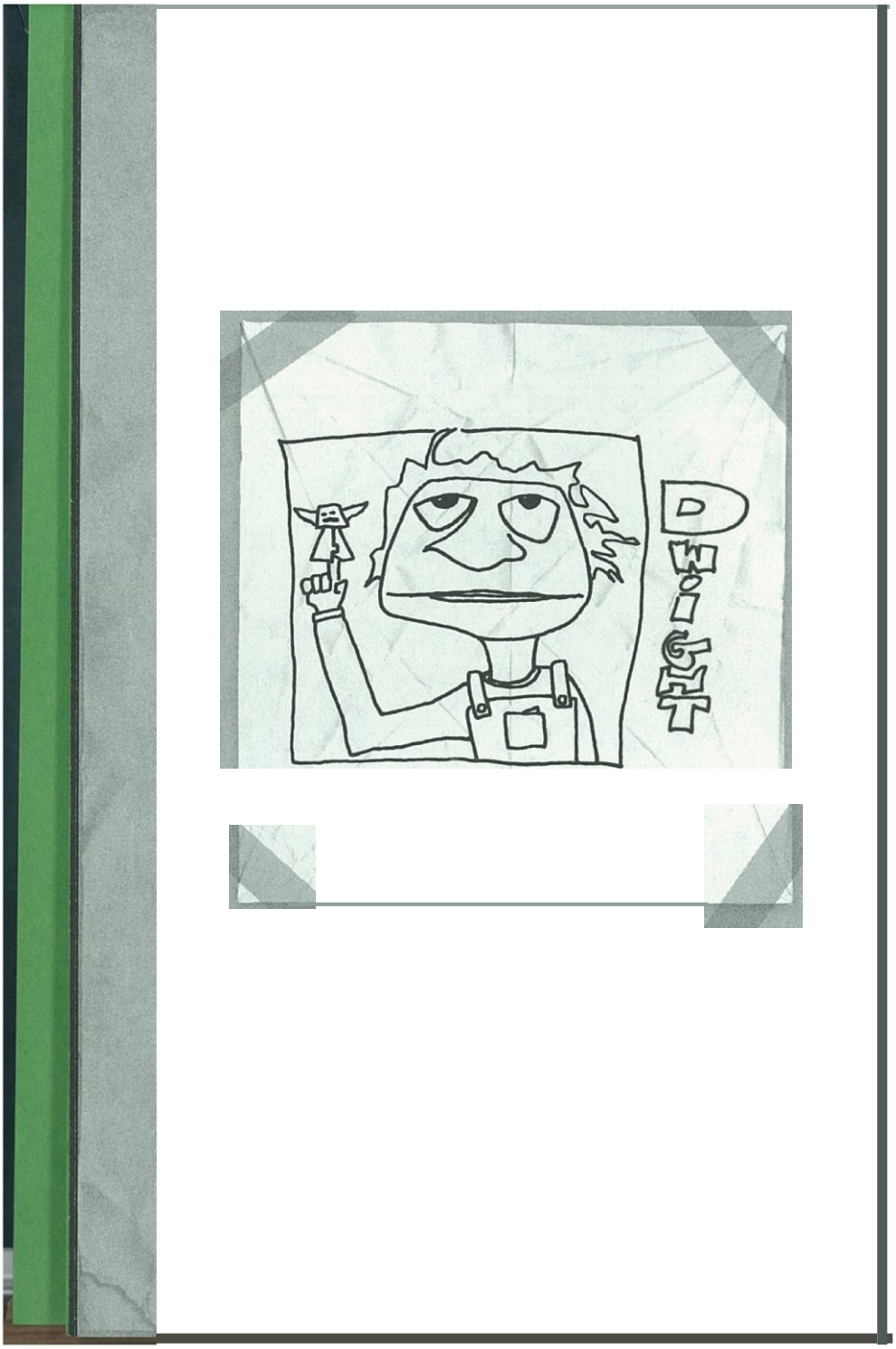
Counterbalance of Question Conditions Across Stories and Participants

Participant	Origami Yoda & The Night of Fun	Origami Yoda & The Homerun	Origami Yoda & Shakespeare's Head	Origami Yoda & The Cheeto Hog
1	Literal Detail	Causal Inference	Embedded Inference	Control
2	Control	Literal Detail	Causal Inference	Embedded Inference
3	Embedded Inference	Control	Literal Detail	Causal Inference
4	Causal Inference	Embedded Inference	Control	Literal Detail
5	Literal Detail	Causal Inference	Embedded Inference	Control
6	Control	Literal Detail	Causal Inference	Embedded Inference
7	Embedded Inference	Control	Literal Detail	Causal Inference
8	Causal Inference	Embedded Inference	Control	Literal Detail
9	Control	Literal Detail	Causal Inference	Embedded Inference
10	Embedded Inference	Control	Literal Detail	Causal Inference
11	Causal Inference	Embedded Inference	Control	Literal Detail
12	Literal Detail	Causal Inference	Embedded Inference	Control
13	Control	Literal Detail	Causal Inference	Embedded Inference
14	Embedded Inference	Control	Literal Detail	Causal Inference
15	Causal Inference	Embedded Inference	Control	Literal Detail
16	Literal Detail	Causal Inference	Embedded Inference	Control
17	Control	Literal Detail	Causal Inference	Embedded Inference
18	Embedded Inference	Control	Literal Detail	Causal Inference
19	Causal Inference	Embedded Inference	Control	Literal Detail
20	Literal Detail	Causal Inference	Embedded Inference	Control
21	Control	Literal Detail	Causal Inference	Embedded Inference
22	Embedded Inference	Control	Literal Detail	Causal Inference
23	Causal Inference	Embedded Inference	Control	Literal Detail
24	Control	Literal Detail	Causal Inference	Embedded Inference
25	Embedded Inference	Control	Literal Detail	Causal Inference

Note: There are two breaks in the pattern due to the removal of two participants.

Appendix C

The Strange Case of Origami Yoda: Preface & Stories



ORiGAMi YODA AND DWiGHT

B'(l"OMM'(

The big question: Is Origami Yoda real?

Well, of course he's real. I mean, he's a real finger puppet made out of a real piece of paper.

But I mean: Is he REAL? Does he really know things? Can he see the future? Does he use the Force?

Or is he just a hoax that fooled a whole bunch of us at McQuarrie Middle School?

It's REALLY important for me to figure out if he's real. Because I've got to decide

whether to take his advice or not, and if I make the wrong choice, I'm doomed! I don't want to get into all that yet, so for now let's just say it's about this really cool girl, Sara, and whether or not I should risk making a fool of myself for her.

Origami Yoda says to do it, but if he's wrong . . . tota1 humi1iation.

So I've got to know if he's real. I need so1id answers. I need scientific evidence. That's why I went around and asked everybody who got help from Origami Yoda to tell their stories. Then I put all the stories together in this case file. Who knows, maybe this case file could even be useful if scientists ever decide to study Origami Yoda.

To try to make it really scientific, I let my friend Harvey comment on each story. Harvey has never, ever believed in Origami Yoda even for one second, and he still doesn't. In fact, he says he is 100 percent sure that Origami Yoda is just a "green

paperwad." So he tried to find the "logical explanation" for all the really weird things that happened.

And then I commented on each story, too, because after all, I'm the one who's trying to figure this whole thing out.

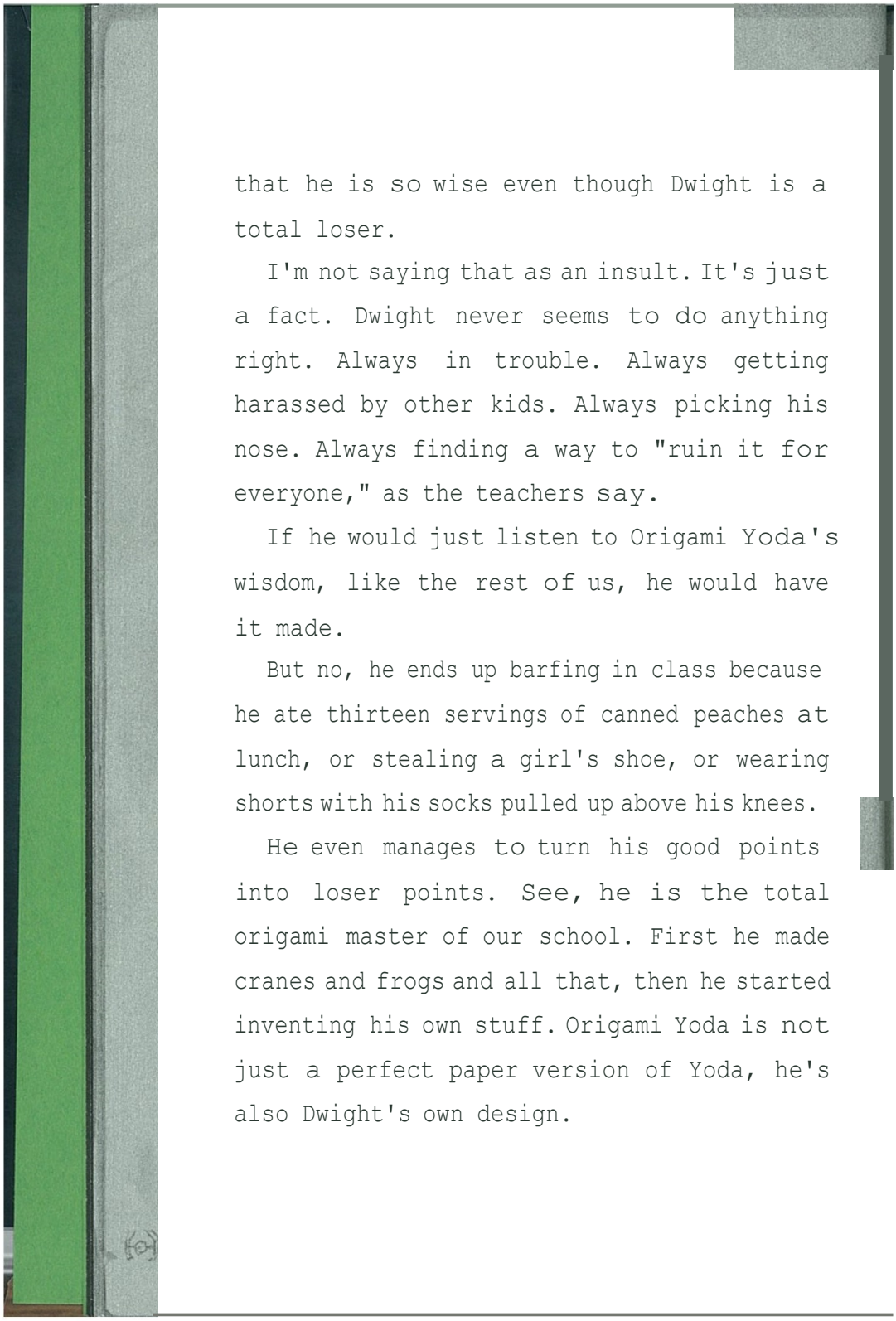
My other friend Kellen wanted to help, too. So I let him borrow the case file. Instead of adding anything useful, he just doodled all over it! I was mad at first, but actually, some of the doodles almost look like people from school, so I didn't bother trying to erase them.

And anyway, I don't have time for that. I've got to study this thing and make a decision: Is Origami Yoda real, or isn't he?

Oh yeah, one other thing I almost forgot about: Dwight.

Dwight is the guy who carries Origami Yoda around on his finger.

The strangest thing about Origami Yoda is



that he is so wise even though Dwight is a total loser.

I'm not saying that as an insult. It's just a fact. Dwight never seems to do anything right. Always in trouble. Always getting harassed by other kids. Always picking his nose. Always finding a way to "ruin it for everyone," as the teachers say.

If he would just listen to Origami Yoda's wisdom, like the rest of us, he would have it made.

But no, he ends up barfing in class because he ate thirteen servings of canned peaches at lunch, or stealing a girl's shoe, or wearing shorts with his socks pulled up above his knees.

He even manages to turn his good points into loser points. See, he is the total origami master of our school. First he made cranes and frogs and all that, then he started inventing his own stuff. Origami Yoda is not just a perfect paper version of Yoda, he's also Dwight's own design.

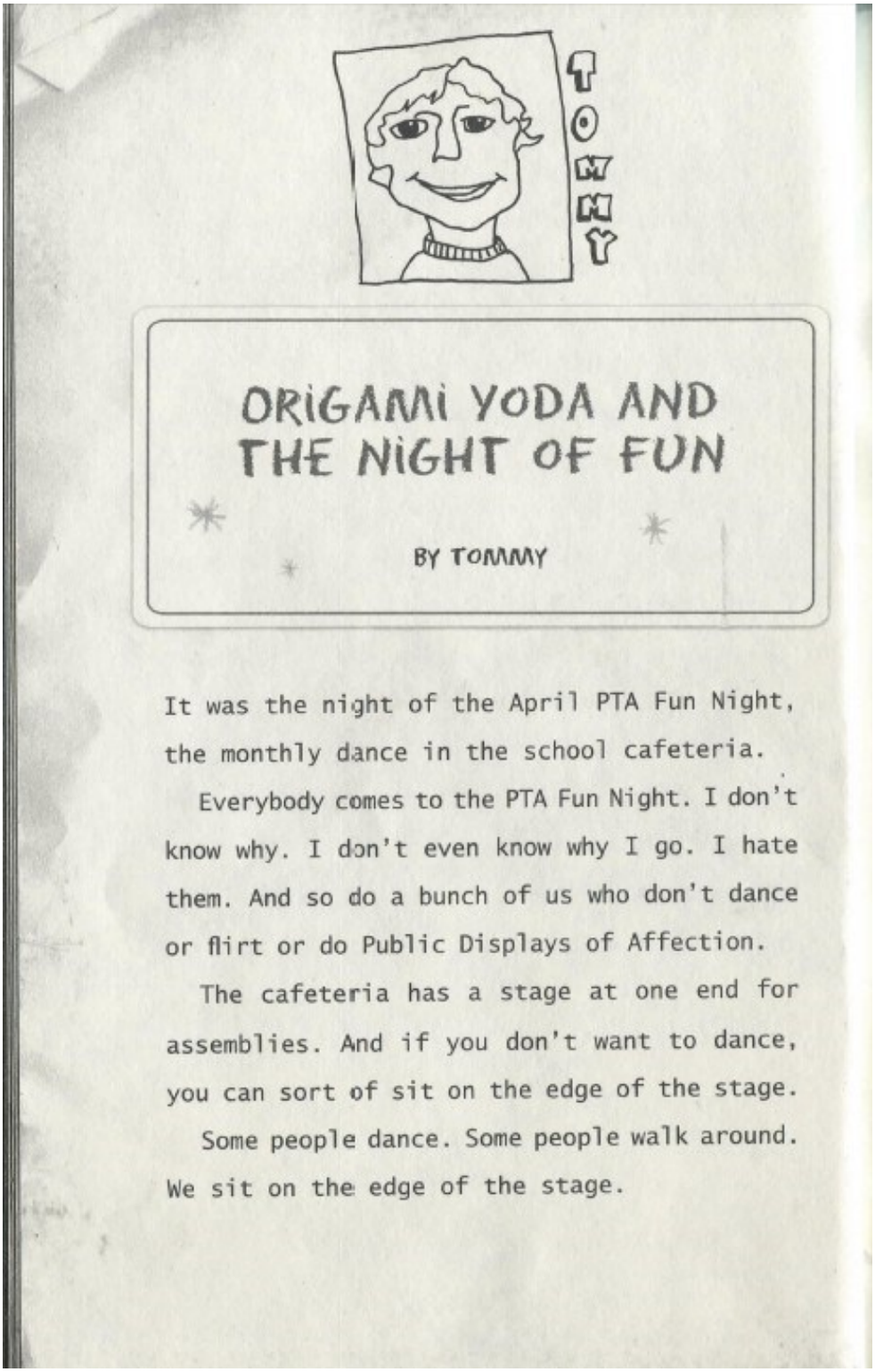
Dwight's not the first person in the world to make an Origami Yoda, of course. There are a bunch of them on the Internet. But Dwight didn't download instructions; he actually created his own Origami Yoda.

But it's one thing to make a paper Yoda, and it's another to ask people to talk to it. That's what makes him a loser. You can't go around school with a paper Yoda on your finger talking to people.

I bet even Origami Yoda would tell him that, if he would just listen.

Anyway, here's the first story, which happens to be about a girl (not THE girl)and shows how good it can be to listen to what Origami Yoda has to say.

Experimental Stories



There's usua11y me and my best friends, Kellen and Harvey. Harvey is the tall one with the smirk on his face; Ke11en is the thin one who is trying to look cool by nodding his head to the music; I'm the short one with air that's a pain in the butt to try to keep combed.

And then here's Lance, Mike, and Quavondo. They're on the stage because most people won't ta1k to them. Why not? Because Lance is 1\eird and Mike cries all the time and Quavondo is the famous Cheeto Hog. They're social outcasts. I don't know why they come to Fun Night, because they have even less of a chance of dancing with a girl than I do.

There are a few girls who sit there, too, like Cassie and Caroline. I don't know why they sit on the stage-just shy or something, I guess. I don't thik they even talk to each other.

And there's Dwight, of course. I know we alreacy look like nerds sitting on the stage

like that, but Dwight somehow makes us look worse. At last month's Fun Night he suddenly dec,ded he could dance, and he started doing this weird jumping-around thing.

Wait, it gets worse. He bumped into this popular girl, Jennifer, who was carrying a drink from the snack table, and made her spill it.

Ill: gets worse still. Dwight goes, "I'll clean it up," and jumps on the Ooor and scootches around on his stomach. Then he stands up with a huge wet spot on his shirt and starts dancing again.

Believe it or not, it gets worse STILL, because he says to Jennifer, "Would you care to dance, m'lady?" After she says, "No way," he walks back over to us. With everybody watching!

"Man, you're just embarrassing us,·· Harvey said. "Why do you even try? Nobody's ever going to dance with you. Why can't you just play it cool?"

"You mean just stand here doing nothing like you guys do?" asked Dwight. "Okay."

And he froze right there and stood there the rest of the night without moving. He was still standing there when I left.

As far as I know, that's the only time any one of us from the stage has ever asked a girl to dance. It's not that we don't want to. In fact, we spend most of each Fun Night debating whether we should and wishing a girl would just come up and ask us instead. (One time I almost got Kellen to ask Rhondella to dance, but his mother came to pick him up riqht before he was about to do it.)

This time, Kellen and Harvey were trying to get me to ask Hannah, who was hanging around between the stage and the snack table.

"She's just standing there all by herself," said Kellen.

"Yeah, and I'm pretty sure she 1ikes you," said Harvey.

I know better than to trust Harvey, but I

,'

was kind of tempted. I mean, Hannah's not the girl I like best-that's Sara, who I am 100 percent afraid to ask to dance.

But Hannah's always been pretty nice to me. Maybe she would say yes. Then maybe Sara would see us dancing and get jealous and decide she wanted to dance with me, too, and then she would ask me and I wouldn't have to ask her!

After all these times of just standing there 1oatching, just the idea of finally asking a girl to dance made me start to get all freaky-even if it wasn't Sara, it was still a girl and it nould still be dancing. (Thank goodness the 'TA Fun Night never has any slow dances where you touch each other!) My hands were shaking and my stomach was excited like the time my dad accidentally drove into a fire hydrant.

Yes, I thought, this is my chance. I'm going tc do it.

I was actually starting to walk over to

Hannah when Dwight hopped off the stage and stopped me.

"Better ask Origami Yoda first."

"Ugh, can't you crawl back in your hole?" said Harvey. "Didn't you embarrass us all enough the last time?"

"Maybe I'm here to stop you from getting embarrassed," said Dwight. Then he held up his right hand, and there was his paper Yoda finger puppet on his finger. "Ask Origami Yoda."

Now, we had all seen Origami Yoda before, but this was the first time Dwight had asked us to talk to it. It was a historic moment, but I didn't know it then.

"Would you put that away?" hissed Harvey. "You're making us all look like losers."

"Fine," said Dwight, and he started to walk away. "I just thought Tommy needed some help."

"He needs all the help he can get," said Kellen. "What's your advice?"

"I don't have any advice," said Dwight. "But Origami Yoda does."

Then oight wiggled the finger puppet and made this weird, squeaky voice: ("Rush in fools do."S L]j

"Is that supposed to sound like Yoda?" said Harvey. "That's the worst Yoda impression I've ever heard. Here's what Yoda sounds 1ike . . ."

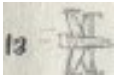
And Harvey started repeating every Yoda line from every *Star Wars* movie.

But Kellen and I ignored him and started trying to figure out the advice.

"Yoda always mixes his words up," I said, "so I bet he really meant 'Fools are in a rush.' That makes it soumd like I would be a fool o rush over there and ask Hannah to **dance."**

"Yeah, I agree," said Mike. He and Quavondo and all the kids on the stage were listening. The whole thing was getting really embarrassing.

"Are you saying he shouldn't do it?" asked Cassie.



"I'm not saying anything," said Dwight. "Origami Yoda is."

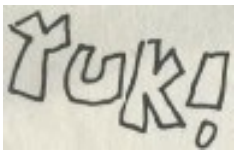
"That is the dumbest thing I've ever heard in my life," said Harvey, who had finally stopped his Yoda impressions. "Tommy, if you miss dancing with Hannah because of Dwight's green paperwad, then you are a Super-Fool. Go do it."

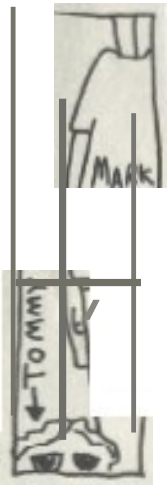
"Just hold on a minute," I said. "There's no need for me to RUSH over there."

"Aw, dude, you're just looking for an excuse to be a chicken," said Kellen, pushing me. "Go ask her!"

"Give me a handful!"

Just then this seventh-grader, Mark, who is about two feet taller than me, comes in and Hannah practically runs over to grab him. And they kiss each other right there in the lunchroom, which is a Public Display of Affection and totally against the rules and furthermore disgusting to watch.





"Good thing you listened to Origami Yoda," aid Dwight.

Yes, it was a good thing! It was a great thing. Can you imagine if I had been asking her to dance when that big stud guy came along? Man, shc would have knocked me down to yet at him and I would have been a laughingstock. Harvey would have been going wild w1th that big donkey laugh of his. Even Kellen would have been busting a gut.

So, basically, Origami Yoda saved my butt!

That's when I started listening to Origami Yoda, and eventually a lol ur ulher people did, too.

Harvey's Coh>h>fhf

01, yes, I belie'ole/1 belie'ole ; Paperwacl Y•cla/ W•••/

I lie'ole lot's a real, CKfual, e uie piece·paper ltf1ld •• floe e cl - DwiSiof's real actual se ui e ''"er. A .c I bel;e"e l>w;3ltf ;s fitr"al, ac.tu l. St•Ui•e biSSest ut si Ce Mr. Pea•uf·

ORiGAMi YODA *AND* TH-E HOM£ f VN

BY **Mil(f**

Origami Yoda changed my life!!!!

I mean how long has it been that playing softball in P.E. has been driving me insane? It's been a long time. A looooooong time. Since we started playing Wiffle ball in first grade.

All I've ever wanted was Just to hit the doggone ball, man. But it was always strikeout, strikeouc strikeout· with the occasional little bloop that would go straight to the Jerk pitcher, who would throw it to the Jerk at first base for an easy out.

I may as well admit how I would cry afterward, because everybody in school already knows that anyway. But there's a difference between nboo-hoon tears and the tears I get, which are because I'm so angry. At least, I think there's a difference. Nobody else seems to think so.

OO–
HOO
Tt:AR

I Just kept thinking that 1f I could get a hiC maybe even a home run, I would be a hero and everyone would forget about the strikeouts and the crying, but here's what happens instead:

AtJ R'(
'TE.A show

nThis will be the *one,n* I say to myself. HI'll them, I'll blast it down their throats!n

And then I swing and miss. Then I swing and miss again and get even madder. Then I look out and see how they're all Just waiting for me to strike out. They're so sure they know every freaking thing about softball! At this point know that I'm so angry that if I hit the ball, will knock it a mile. Then I miss a third time, and that's when I get so angry that I cry.

That wasn't that big a deal in the first grade, but it is now. A really big deal. Everybody

knows me as the kid who cries during P.E. And/ that's not good.

so then I saw Dwight's Yoda puppet sav-;Tommy) at the dance. Well, Dwight'S a nuC but I figured maybe he had tapped into the Force or something. (I totallY believe in the Force and have spent a lot of time trying to focus my mind so that I can tap into it, too.)

So one day at lunch I went over to where Dwight was sitting with Tommy and those guys and said, nYoda, can you tell me how to use the orce to hit a home run?n

u wish home run to hit wh asked Yoda.

· uwelL I mean, I want to win, right? That's WhY YOU PlOY a game, isn't it?n

Yoda didn't say anything, but he was looking at me with his two tiny little eyes.

ni mean, I want to be a hero for once, right?n said. °I'm tired of always striking out.n

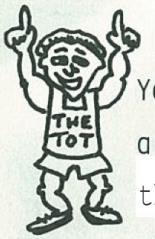
Yoda still just looked at me.

HI mean, they hardly even pay attention when

I get my turn. And they all think they're so great because they hit the ball or because they can catch it when it comes to them. They're always shouting stuff at mebossing me around. I'm sick of it."

Yoda still just looked at me.

I looked around at Tommy and Kellen and the others.



"I meanyou guys feel the same wayright? You're tired of Tater Tot and those other jocks always winning too right? I'd love to show them they aren't better than me."

"Better than you they are," said Yoda

Everybody started laughing.

"Hey shut up!" I shouted. "You're a jerk Dwight! All of you!"

And I left. ManI was reallY mad. Tears were starting!

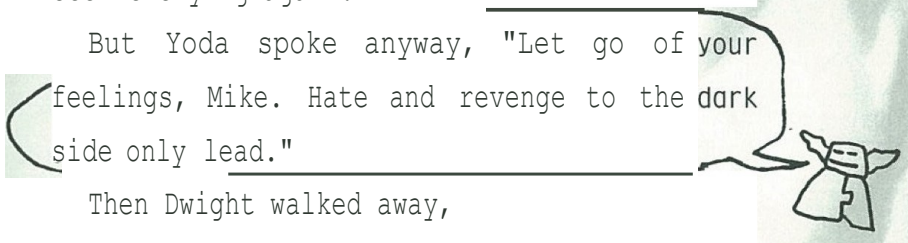
But then I realized Dwight had followed me back to my table.

"Yoda's not nnishedMike" said Dwight.

"Leave me alone" I said. The last thing I

needed was for everybody to look over here and see me crying again.

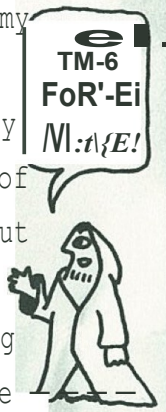
But Yoda spoke anyway, "Let go of your feelings, Mike. Hate and revenge to the dark side only lead."



Then Dwight walked away,

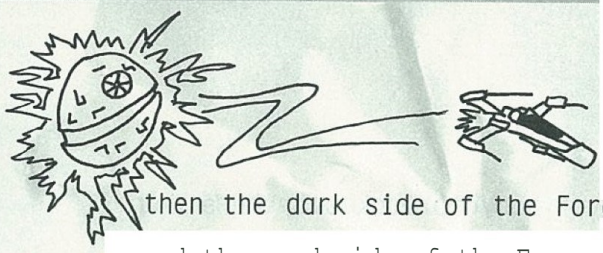
So when it was time for P.E., I was stuck in my usual position with no helP from Origami Yoda at all. cor, at least- **it** seemed that way.)

I'm always last_ so I didn't get up to bat until near the end of the second inning. It's crazy, because as much as I hate softball and hate to bat_ I also can't wait until it's my turn.



So I stood there with the bat and suddenly remembered what Yoda said about letting go of my feelings. Maybe he was a little right about that- I figured.

Maybe if I could clear my brain of thinking about how much I hated softball, Tater TaL the Pitcher, the whole other team, and Miss Toner,



then the dark side of the Force would go away and the good side of the Force would help me hit the ball the same way it helped Luke blow up the Death Star.

The ball whizzed past me; I didn't even have time to swing.

nstrike one,n said Miss Toner, our P.E. teacher, who is the umpire.

I tried not to be mad. Even if I had swung, I probablY would have missed and gotten a strike anyway,

Another ball went by. *nBall* one,n said Miss Toner.

Nothing to be mad about there. That's the first time I've ever gotten a ball. NormallY I always swing at everything because I'm so worked up.

The next Pitch was way too high, I usually swing at those. This time I Just stood there. nBall two.n Maybe I'll get walked, I thought.

So I let the next pitch go by, too. nstrike two.n

That wasn't working. I knew I needed to try to actuallY hit the ball.

When the next pitch came, a tiny voice in mY head seemed to say, uswing.u Was Yoda's voice? So I swung. ustrike three,u said Miss Toner. uGood try, Mike.u

walked back to the bench trying to figure out what had happened. Had misunderstood Yoda? Was Dwight Just full of crap? Was his Yoda puppet Just some kind of pointless Joke?

I went UP to Dwight and said, uwell?u

And Yoda said,C:Cry you did not. u 5 L}>

He was right. I hadn't cried. I hadn't even thrown the batting helmet on the ground. I hadn't made a fool of myself, for once.

Just then, Tater Tot came up to bat and smashed the ball a long, long way, Another home run.

Yes, I realized, Yoda was right. Guys like Tater Tot reallY are better than me. At softbalL that is. So why hate him? And why cry about it?

Since that day, I'm still striking out mostly, but I also get walked some, too. But none of that reallY matters. The important thing is I'm not crying about it or even getting mad about

it. And now that I'm spending less of my time hating people like Tater ToL I think I'm getting closer to using the Force myself. At least I'm not going to the dark side anymore.

Harvey's Commeht

U", f f"oog"f Mike askecl Paf'erwa<l Yo<fa to "elf' "iltJ "if a "ottJe rot .f all "e wat fecl to cto was walk a ew fitt es, f coolcl "a'le fol<f "itt! "ow to <fo f"af. Most of"ese ki<ls cat't f'ifc" at all, so iyou josf sfat <l f"ere at <I waif, you'll gef walke<l. If <foest't take Yo<fa to igore f"af oof.

f attJ gla<l Mike stof'f'e<l cryit g, f"oog", because f"af was geffitg ol<f.

My Commeht: *As lAS!A a/, Harvey* totally *misseel the* poiht. *Yocla's poiht was* that *there are* more importaht *thihgS* thah *home* r AhS. *Which is 9oocl hews to me, beca!Ase I've* hever *hit* ohe, *either*.

ORi&AMt *YODA* AND SHAI(£SP£AR£'S H£AD

BY CASSIE

ne ,.ason I asked Origom l'odo *a* quesbon was becaUse I brnke Mr. Sniders Shakespeare head.

I don't know whMr. Snider wonted to have a statue of Shokespeores head in his classroom to begin with For one thing. i(s ugly. and for another thing. I don'• think we've ..ad an thing bShakespeare. If we did, I wasn't paying atten on

Another thing I don't understand is how there con be all these stupid. clumsy, loudmouth boys in **ou,. class-like Horvty ond K..,ll.,.n-who** *ore* **always** opping around and throwing stuff and acting like

0doots. but none of them ever nocked *over* the Shakespeare head. And thtn I come along and the thing proctlcally fa'ls over on ots own when I walk past

But anyway. tha(s how ot oS. I was the one who broke ol lt fell olf the w0ndowsill, hit the oor. and busted open like ore of thost hollow chocolaEaster bunnies. I think the fact that 0t was hollow probably means it wasn't a real stowe. but I was sull scored to death when r broke i

I wasn't sure eJoacdy what the pun >hment for breaking Shakespeare's head was goong to be, but I gured it would be pr<ay big

Luckily. I was the only one *m* the room right then. Mr Snoder was in the teachers' lounge, and most of tht other kids were oo the lobrory. where they hang out *every* day before school I tried to do that but if you don't have anyoody *m* partiCular to hang out with, there's nothing to do. And I don't havo anybody on particular. I JUSt started school here in Janua ry and I haven't found anybody I like to hang around with yet

Anyway, Shakespeare's head was in obout so<

pieces. I took all the books out of m!l *backpack,* then I scooped *up* Shakespeare's pieces *and* stuffed him in there.

Then there *was* nothing to *do* but wait *and* see what would happen.

I sot there through the whole *class* with Shakespeare's *head* in m!l *backpack, and* nothing *happened.*

Then, just before *class was over. Mr.* Snider noticed that Sholespeare's *head* was missing.

'What happened to Shakespeare*T* he asked. I just sat there.

"Did !JOU gu!ls *hide* him somewhereT he asked. I just sot there.

The bell *rang.* I *started* to *head* for the *door.*

"Whoa, hold up *a second.* Sit bock down; *said* Mr. Snider. "It's oko!l if someone's plo!Jing *a* joke, but *I* expect to *see Shakespeare back* here *tomorrow.* He *has* sentimental *value* to me. So make sure he's bock *tomorrow.* All rightT

I just sat there *and* so *did* eve'!lbod\1 else. I *was* afraid *Mr. Snider was* going to look at me, but he *was*

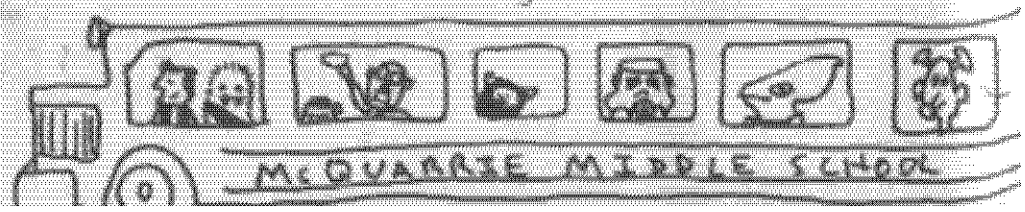
mostly looking at Dwight, who I guess was the most likely suspect since he's weird enough to actually want a Shakespeare head.

"All right, go on," he said at last, and we all jumped up and left.

So far, so good. I was out the door with the Shakespeare pieces in my backpack. Once I got home I could trash it and I'd be safe. I felt bad for messing up Mr. Snider's "sentimental value" or whatever, but what could I do about it?

At the end of the day, I got on the bus with Shakespeare still in my backpack. Dwight got on and sat down next to me. He sits with me every day. Or actually, I guess I sit with him. When I started riding the bus in January, the only seat nobody was saving for somebody else was next to him. Usually he's talking about robots or spiders or something, but today he started right away asking about my backpack.

"To be in the backpack or not to be in the backpack, that is the question," he said in sort of a British accent or something.



"What?" I said. The word "backpack" made me jump. Did he know?

"Shakespeare, Shakespeare, wherefore art thou, Shakespeare? The backpack, perchance?" he said.

"Shhhhh!" I whispered. "How did you know?"

"Elementary, my dear Cassie," he whispered back, but with the same weird accent. "When we rode the bus to school this morning, your books were in your backpack. But now I see that you are holding your books on your lap, yet your backpack is quite full. Therefore, something else must be in the backpack. It's obvious what it is."

"Are you going to tell Mr. Snider?"

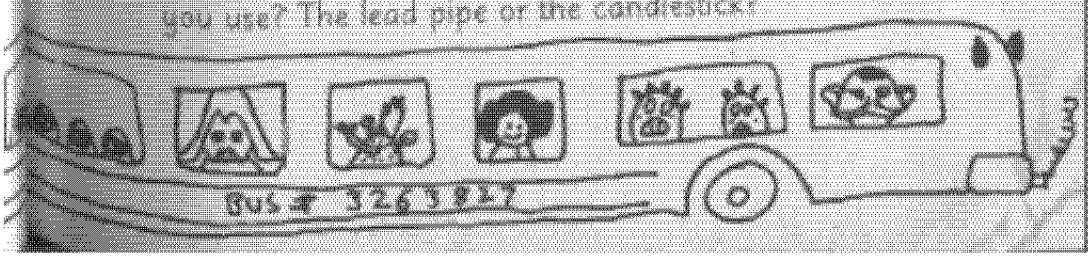
"No need," he said. "I saw him watching you and your enormous backpack when you left class. He's probably testing you to see if you bring it back or not."

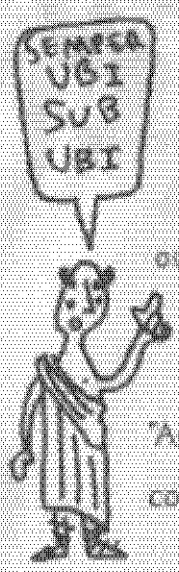
"But I can't bring it back," I whispered. "It's broken!"

"Dear me, what a calamity," he said. (Still in the weird accent, by the way.) "May I see the victim?"

I unzipped the backpack a little so he could peek in.

"By George, it looks like murder, all right. What did you use? The lead pipe or the candlestick?"





"No, it was just an accident."

"If it was an accident, why did you sneak the victim out of the room?"

"I didn't want to get into trouble."

"Ah, but now you're in much more trouble," he said. "As the Romans said, *Vorpius de lporius acto*. The cover-up is worse than the crime."

Well, now I was really worried, and I have to admit that I was starting to cry. If I didn't bring it back, Mr. Snider would think I had stolen it. If I did bring it back, he would know I had broken it and might even think I had done it on purpose. Either way, he would know I tried to get away with it.

"What should I do?" I asked.

"Maybe you should Origami Dwight.

"I'm serious!" I said.

"Origami Yoda is serious, too," said Dwight.

"Forget it," I said.

The bus was still about ten minutes from my house, and after I sat there for five minutes without thinking of anything, I finally asked Yoda.

"All right," I said, "what does Yoda think I should do?"

Dwight put Origami Yoda on his finger and said, "New one must you make."

"What's he talking about?" I said. "I can't make a new one."

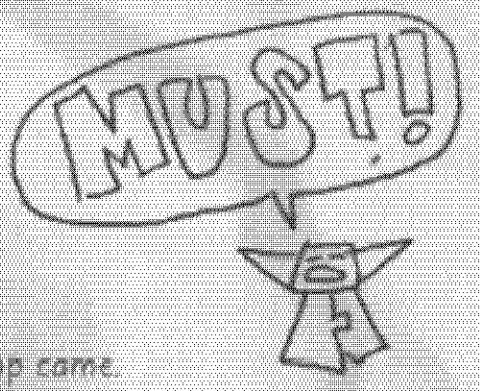
"He said you 'must.'"

"But I can't."

"You must."

"But—"

"MUST!" shouted Yoda.



I was glad when my stop came.

By the time I walked up our driveway, I was thinking that Dwight was crazy and Origami Yoda was crazy, but that they were probably right.

I knew I couldn't make a new one that would fool Mr. Snider, but maybe I could make one good enough to replace the broken one so that he would know I didn't kill Shakespeare on purpose.

And that's exactly what happened.

I called Mom at work and asked her to stop by the Dollar Corral and get me about ten dollars' worth

of tho: fake Plo -Doh thesell. I told *her* it wos *'or a* school project which was true

I *used* the broken portS *of* the old Shakespeare as *a* guide ond I *did a* pretty good job, although the fake Pla ·Doh was bright blue and red. so Shakesp•ore ended *up* being *red* with *o* blue wig.

When I showed it to *Mr.* Snider the next morning. he laughed his *head off and wasn't* mod.

He *said* thot te new Shakespeare would *h1ve* even m re sentimental value than the old one. t'.nd i(s still sitting there in his classroom, although its gotten reoll*drand* crumb/*and* sometimes the nose *falls off.* But ou con stick it bock on *if you* lick it first.

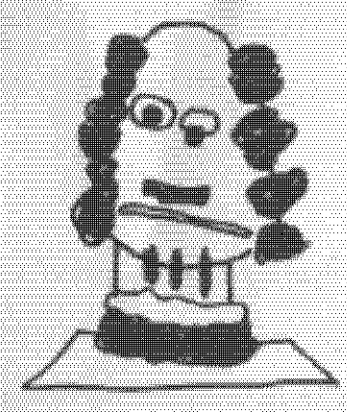
Ha'"fy's G,.,.,f.,t

Was *t at* su ·se4 t• be S akes eare? I t •ust if was R•bnt E. Lee's ·rse.

My C....ɔ ...t. O... *of*"'Y ...,.;,,., *thtorifs is that* Q;9"""" *Yoda* """'I *bf real, btca•Sf V,..;?ht* .ɔ loo *cl.elw lv th;,.,k oF* t/,f Jhoart t/,;,.,9, *that Yoda soys.* B.t *Cassif's*

story makes me wonder about that, since it shows that Dwight can think on his own without Yoda's help.

But the next story suggests the opposite. Not only is Dwight not wise enough to be Origami Yoda, he's not smart enough to listen to Origami Yoda. Of course, this time around neither was I.



NOSE →

OR:t&AMt YODA AND fH£ GH££ro *Ho&*

BY Q.Oi\VONDO

Origami Yoda helped me a lot. even though Dwight didn't want him to. I went up to Dwight and said. "I need Yoda's advice." and Dwight said, "Go away. Cheeto Hog."

Tile whole "Cheeto Hog" thing was what I needed Yoda's advice about in the first place!

What happened was. the si•th grade went on this field trip to the zoo and we saw this "ending machine ne•t to this snack bar up near the buffalo. mr. Howell had told us we weren't allowed to get anything from the refreshment stands or the ice-cream carts. But he hadn"t said anything about the vending machines.

So UJe all ran over to the machine, and I got there first. The bags of snacks cost two dollars each! These were tiny little bags that, like, usually cost maybe seventy-five cents at the Qwikpick.

But I had money that my mom had given me for the trip. so I shoved it In fast before somebody could push me out of the way.

Right then, as soon as my second dollar went in, mr. Howell comes over and starts shouting at us. Basically he told us that we should have known that he meant we couldn't get stuff from vending machines, either. How was I supposed to know that?

Everybody started grumbling. but at least they hadn't lost two dollars in the machine.

"But, mr. Howell," I said, ·1already put two whole dollars In and I haven't pushed the button yet!"

"Good grief." said mr. Howell. "Can you push the coin return button, Quavondo?"

I pushed It and nothing happened. Everybody was standing around watching all this, by the way-Harvey and Tommy and Tater Tot and just about every boy in class.

"All right," groaned mr. Howell, "go ahead and get something. Quavondo, but that's it. nobody else. I mean it. This is a big waste of money."

So I pushed the button fo r a bag of Cheetos and the bag came out and I picked It up and it felt like there was almost nothing in lt. It was even sma ller than the seventy-five-cent bags!

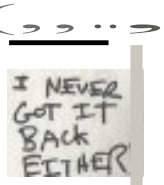
So I turn around and there's half the class wanting me to share my (heetos. Look. I wouldn't have minded sharing with one person, but there probably weren't enough Cheetos to even give everybody one. And I was hungry!

So that's when things got nasty and people started grabbing at them and I ended up stuffing them In mrnouth and then I started to choke on them and Harvey said, "Serves you right.Cheeto Hog." And everybody laughed.

And instead of stopping them. mr. Howell just said, "That's why i didn't want people buying food ." Well, If he had said that in the first place. maybe I wouldn't have wasted two dollars and practically choked to death!

So ever since the r people have been rea l mean to me and keep calling me Cheeto Hog. and one day during

math I needed to borrow an eraser- and no one would lend me one until mr. Howell forced Kellen to give me one.



So, obviously, I was getting tired of all that and I had heard atout how Yoda helped mike stop being a softball crybaby, so I fagured I would ask for his advice. But Dwight wouldn·t let me.

··o-nay ay-way.eeto-Chay og-Ha!J," he said.

"Cmon, Dwight, that's what I need to ask Yoda about,"

"Orgel it-fay ," he said.

But then something really scary happened! His right hand shot up in the air. and the Yoda puppet was on one finger.

··cheetos for everyone you must buy · said Owlg,t .In his Yoda voice. And then he put his hand over his OWn mOUTH! But he kept on trying to talk!

··Assembly during tomorrow will be," he mumbled through his hand. "Then the Cheetos give you must. Big bags must they be!"

"But I can't bring Cheetos to an assembly! You know the rule about no food in the gym! r-ll get in huge trouble!'

Better evenf)squawked Yoda "Trouble better lsi"

/.....:t> At this point Dwight-still covering his mouth and still talking as Yoda-put his coat over his head and crawled under the lunch table.

Everybody was looking, of course.

"But I can't do that." I said to Tommy and Kellen. who were sitting right there. and they said. "Shut up. Cheeto Hogl"

Well, that night my older brother gave me a ride down Route 2Y to the Food Lion in Vinton.

There was no way I wa; goong to buy a bag of Choetos for everybody in the school. But I fou nd out that there are 116 kids on the si th grade. and that sounded possible.

At Food Lion, they had twelve-packs of three-ounce Cheetos bags for $5.99. So I bought ten of these packs to get 120 b gs. That cot $59.90 plus taw, which was $3.58. So the whole thing cost me $63 YB!

Luckily, I had fifty dollars my grandmother had sent me for my birthday.and the rest I borrowed from my brother.

The neMt morning, I crammod most of the Cheetos

bags into 11y backpack and an old Elmo backpack I used to use. I had to leave all my books at home. And then I put an my winter coat and stuck the rest of the bags into all the different pocke ts. It was still *a* little chilly outside. sa I didn't look too crazy. I hope.

As sooo as I gat to school. I crammed it all In my locker.

Yada had been right about there being an assembly. It was ffir. Goad Clean Fun. ffir. Goad Clean Fun comes to our school every couple of months to talk about how we should wash our hands after using the bathroom and take baths and things like that. His puppet is *a* singing monkey.

mr.Good Clean Fun does his show for one grade at *a* time.and us sixth-graders weren't having our assembly untill:30, 1he beginning of seventh period.

now, rl!'lllember that everybody had heard Dwight/ Yada the day before at lunch, so everybody knew what I was doing. And they asked me about It all day long.

"You really brought the Cheetos, Quavondo? I don·t believe it," said Tater Tat. It was working already! He called me bmy name and not Cheeto Hog!

Mr. Good Clean Fun

and **SOAPY**
lhe monke-s

present:
.Feeling good a'bout our smells"

"Yeah. shhh. don't tell miss Toner."

"no problem. Give 'em here."

"no. I have to wait until the assembly."

"Wh ?" he asked.

"Yod• said *so:·* I said.

"Oh, yeah." he said.

I promised everybody that they would get their Cheetos.

I wasn't sure how I was going to give them out,because I knew any of the 1eachers, especially mr. Howell or miss Toner. would stop me if they saw me with them.

So I asked 0 r;.ga:;m:::::Y:::o:d:::a::: ———___,———
He told me.(i;peed must you have." *"f* / \J \

Dwight told me that I could give him his bag of Cheetos right then. but I told him what I told everybody else: "Yoda said to wait."

So when the bell rang at the end of sixth period. I just jumped up and ran without waiting to be dismissed.

Some of the other kids in the class started running after me. and when kids from other classes saw us running through the hall, they started running. too. so they wouldn't miss out on the Cheetos.

Unfortunately. mr. Howell saw us when we ran by his classroom.

·we don't run to assembly!" he shouted.

I had secretly left my lotker unlocked. so all I had to do was grab the backpacks and my coat and keep running.

Some of the boys tried to grab them, but I shouted, ·no. Yoda said to walt for the assembly!"

We burst into the gym and then the feeding frenzy started. I tried to hand out the bags one at *a* time. but the kids just started pushing and grabbing so much I gave up.

"Just one!" I had to keep shouting. "There's one bag for everybody =

At one point I looked up anc saw that mr. Good Clean Fun was standing on the stage with his monkey just staring at us.

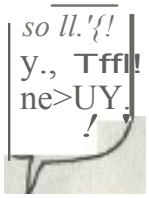
By the time mr. Howell gat there, everybody had a bag and was pigging out.

"What the heck Is going on here! Quavondo, did you do this? What is the deal with you and Cheetos? All right. you go to the office and I'll be down later to discuss

this with Principal Rabbski and write up your in-school suspension slip."

ffiiss Toner got there ne•t and she blew her whistle and shouted, "The rest of you, go throw those bags away. I mean it. And don't try stuffing the whole bag In your shirt, Harvey. I can see it!I want those bags in the trash now!"

So I spent the rest of the day in the office. Principal Rabbskl told me that I had embarrassed the school and insulted mr. Good Clean Fun. She wrote a note that I had to take home to get signed by my parents and I had to write a five-page report about nutrition and a letter of apology to mr. Good Clean Fun. I heard later that most of the Cheetos did get thrown away, so that was sixty-three bucks' worth of Cheetos wasted.



But It was all worth it. because almost nobody ever calls me Cheeto Hog anymore!

Harvey's Comment

As ar as I Ga• see, *all* fJ,is story pr•lles is fJ,af l>wi3hf is Graz.y as a bald 3•rilla.I was fhere wJ,e• J,e was d•i•3 fhaf colleri•3-hiS41!•Ufh fhi•3·a•d if was

totally e t barrassi" WIV' does e 1111e to sit at our table? WIV' would't t ey let te l:.ic:l:. .., •1/f?

A"yway, l>wi t's adllic.e ad "of i"to d• wit Y•da. lie just wa"f'd t• et a ree ba - c eetos. W ic.e of. I saw ;.., eat te w1,ole bi" about ••e sec.•od w ile 11\iss To"er was askious to t row t ototaw. Il load a Sia"t ..,outo like e does, 1 would"'t aile load t• fry to ide t oe.., i" ..,,s irf.

Sec:ood, 1 aile a t essase or Quallo"d•: o"u a c eeto flos,always a c eeto ll• .

My Co.....Ent: Harvry's *all* wrong. TJ,;s w•S *YoJos btst po'tct o(oJvoCt* ytf. *O.ovondo* wtnf *fror..* Oting *o /,aftJ Geefo* Hoto bring *o /,tro. TJ,t* fact *t/,at /,t* gof *in tro.bl, for* tryin9 *to 9ivt w•y* arttos *...Jt tvtryboJy likt* /,;,.., *tvtn* ,..,*ort. AnJ YoJo prtJicttcl tJ..ot,* too.

f"'WJ -:t *Yltw* Mt

O 1 ost @fp!'O*

C EE.Te>S*C!L*

Appendix D

Question Conditions

Origami Yoda and the Mght of Fun: Literal Detail Questions

P:___

a) Before today. had you ever read 'Origami Yoda & The Night of Fun'? Check off one box.

Yes O No Q

b) How much did you like this srory? Circle a number.

1 2 3 4 5 6 7 8 9 10

lIidlI't like it at all! I would rather stare at a wall thaI1 read that againl1.

It was okay. I didl1't hate it butI didl1't love it either.

WOW! Fal1tastic story -whel1 is the !MOVie COIMing out!?

Storv Questions

1) Where does the PTA fun night take place?

2) During what month is the PTA fun night?

3) Who are Tommy's best friends?

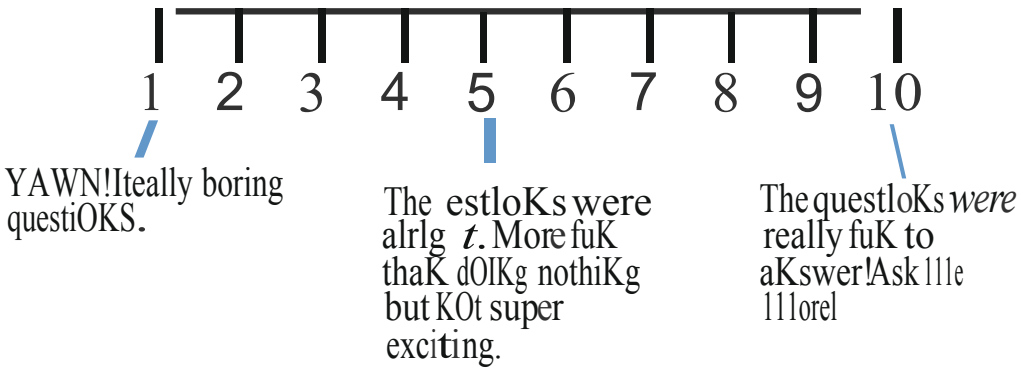
4) Who did Dwight bwnp into at last month's Fun Night dance?

P:

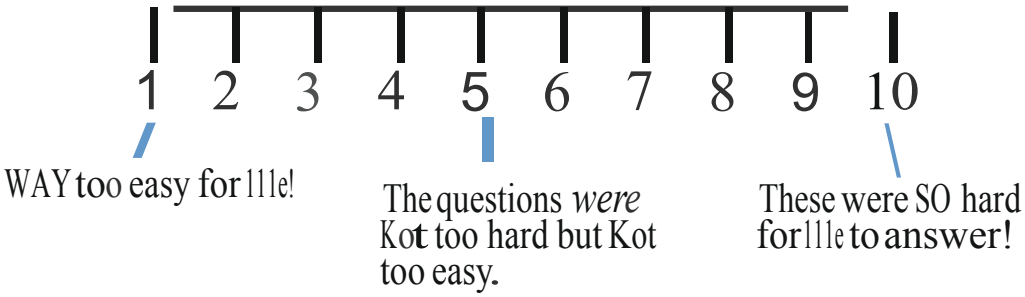
5) What type of dances does the PTA Fun Night NOT have?

6) In what grade is the student who kissed Hannah?

7) How much did you like these questions? Circle a number.



8) How hard were these questions to answer? Circle a nnmber.



Origpmi YO<h and the Mgjlt of Fun: Causal Inforenee Questions

P:___

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vesQ No Q

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1 2 3 4 5 6 7 8 9 10

rlid"t lik at alii I would e it

r stare at a wall rathe d that tha" rea agai".

It was okay. I did"t hate it bllt I did"t love it either.

WOWl Fa"tastie story -when is the 1110vie colllillQ out!?

Storv Questions

1a) Why doesn't Tommy like going to the dances?

1b) How do you know?

2a) How did Dwight feel about the huge wet spot on his shirt?

2b) How do you know?

3) Why don't Tommy and his friends ask the girls to dance?

3b) How do you know?

P:___

4=-) How does lb.rvey tre:: .t the other clur::lcters in the story?

_____

4b) Please give examples:

_____

_____

Sa) What did Harvey and Kellen think of Origami Yoda's advice about not asking Hannah to dance?

_____

Sb) How do you know?

_____

_____

6a) At the end of the story. how did Tommy feel about Origami Yoda's advice?

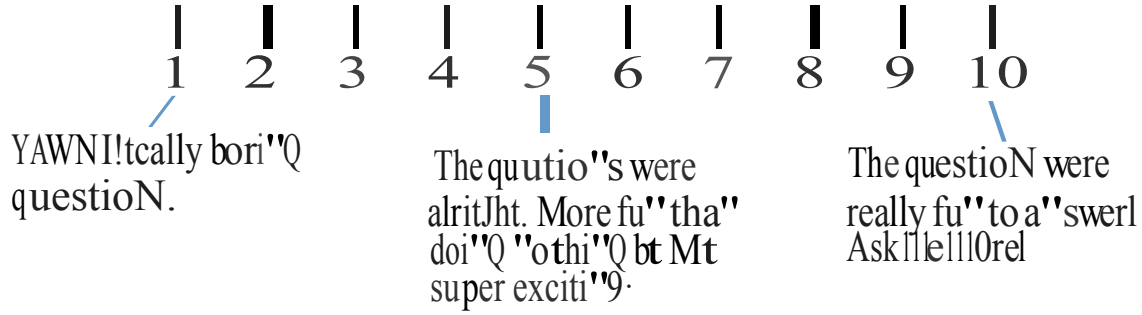
_____

6b) How do you know?

_____

_____

7) How much did you like these questions? Circle a number.



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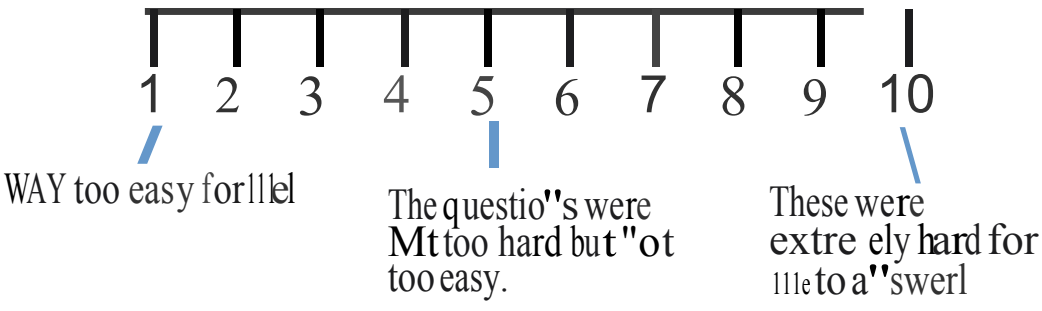
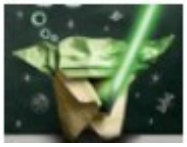


Origami Yoda and the Mght of Fun: Embedded Inference Questions



P·

a) Before today. had you ever read 'Origami Yoda & The Night of Fun'? Check off one box.

Yes O No D

b) How much did you like the story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Uidl I't like it at all! I would rather stare at a wall thall read that agai11.

It was okay. I did11't hate it but I did11't love it either.

WOW! Fa11tastic story -whe11 is the !MOVie COIMillQ out!?

Storv Questions

1a) DoesTommy hate going to the dances because he's not very popular with girls?

1b) Please explain your answer:

2a) Did Harvey like Dwight's behaviour at last month's Fun Night?

2b) How do you know?

3a) Is Tommy nervous about asking girls to dance?

3b) How do you know?

P:__

4a) Is Harvey nice to the other characters in this story?

_____

4b) Please give examples:

_____

_____

Sa) Did Kellen and Harvey agree with Origami Yoda's advice about not asking Hannah to **dance?**

_____

5b} How do you know?

_____

_____

6a) Is Tommy thankful for Origami Yoda at the end of the story?

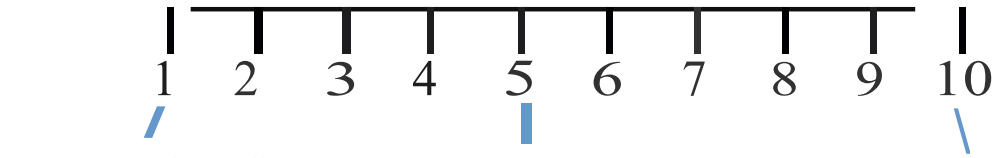
_____

6b) How do you know?

_____

_____

7) How much did you like these questions? Circle a nnmber.

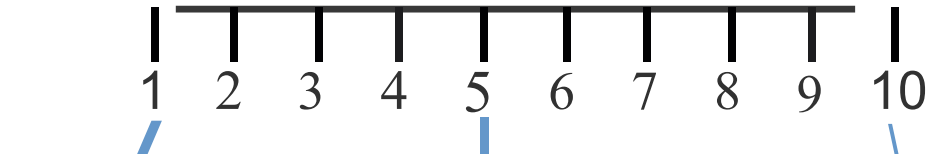


YAWN! R ly borillQ eal question

The questiots were alright. More full thaI1 dOiiiQ IIOthillQ but not super excitiQ.

The questiots were really full to attSwerl Ask 111e •110rel

8) How hard were these questions to answer? Circle a number.



WAY too easy for 1111el

The questiolls were IIOf t00 hard bUt IIOt too easy:

These were extre111ely hard tor 1111el

Origami Yoda and the Mght of Fun: Control Condition

P:___

a) Before today. had you ever read 'Origami Yoda & The Night of Fun'? Check off one box.

Yes O No O

b) How much did you like this story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Pid11't like it at all! I would rather stare at a wall tha11 read that agai11.

It was okay. I did11't hate it but I did11't love it either.

WOW! Fa11tastic story -whe11 is the lltOVieCOIItiiiQ out!?

c) Read the instructions on the reverse side of this page to make your very own Origami Yoda! Use the paper provided in your envelope.

HOW To fOLD ORtbAMi YODA

BY TOMMY

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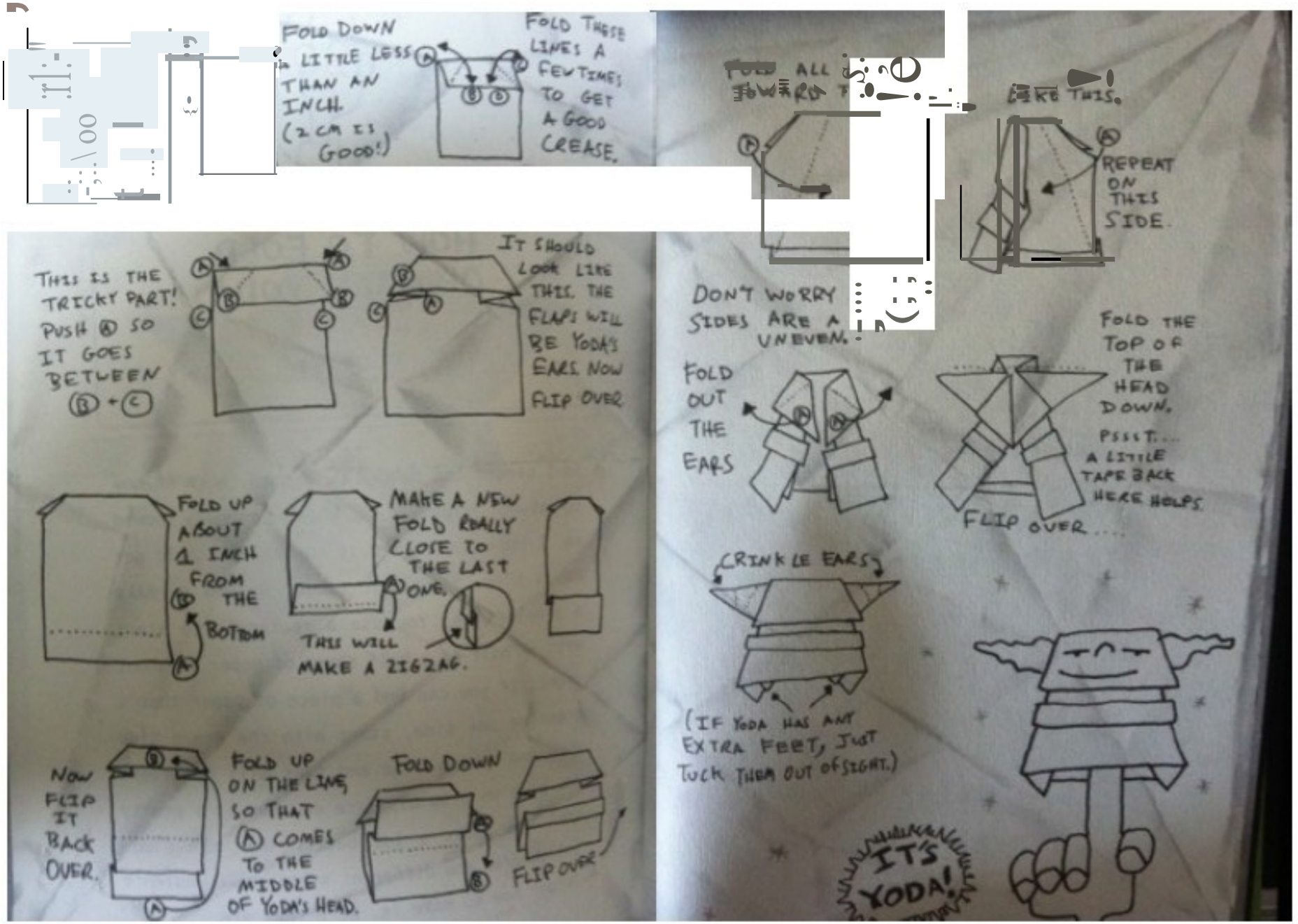
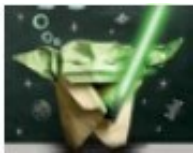
Next page


FOLD DOWN A LITTLE LESS THAN AN INCH. (2 CM IS GOOD!)
FOLD THESE LINES A FEW TIMES TO GET A GOOD CREASE.
FOLD ALL THE WAY TOWARD
LIKE THIS.
REPEAT ON THIS SIDE.
THIS IS THE TRICKY PART! PUSH (A) SO IT GOES BETWEEN (B) + (C)
IT SHOULD LOOK LIKE THIS. THE FLAPS WILL BE YODA'S EARS NOW FLIP OVER
DON'T WORRY SIDES ARE A LITTLE UNEVEN.
FOLD OUT THE EARS
FOLD THE TOP OF THE HEAD DOWN.
PSSST... A LITTLE TAPE BACK HERE HELPS.
FLIP OVER....
FOLD UP ABOUT 1 INCH FROM THE BOTTOM
MAKE A NEW FOLD REALLY CLOSE TO THE LAST ONE.
THIS WILL MAKE A ZIGZAG.
CRINKLE EARS
(IF YODA HAS ANY EXTRA FEET, JUST TUCK THEM OUT OF SIGHT.)
NOW FLIP IT BACK OVER.
FOLD UP ON THE LINE, SO THAT (A) COMES TO THE MIDDLE OF YODA'S HEAD.
FOLD DOWN
FLIP OVER
IT'S YODA!

Origpmi Yoda and the Homerun: Literal Detail Questions



P:

a) Before today. had you ever read 'Origami Yoda & The Homerun'? Check off one box.

Yes O No Q

b) How much did you like this story? Circle a number.

1 2 3 4 5 6 7 8 9 10

llidtt't like it at all! I would rather stare at a wall thatt read that agaitt.

It was okay. I didtt't hate it but I didtt't love it either.

WOW! Fatttastic story -whett is the !MOVie COIMittg out!?

Storv Questions

1) When did the kids start playing Wiffle Ball?

2) What are the two types of tears Mike talks about?

3) The first time Mike was up at bat. how far did he think he could hit the ball?

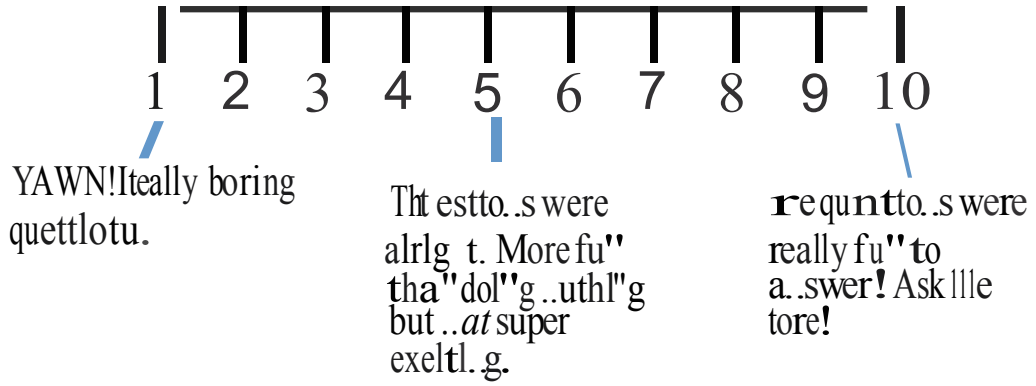
4) Where did Yoda save Tommy?

P·

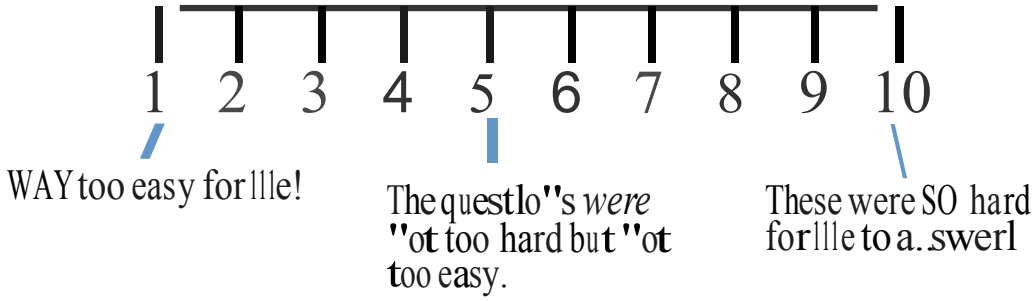
5) What is the name of the PE teacher?

6) At the end of the story, what did the tiny voice in Mike's head seem to say when he was up at bat?

7) How much did you like these questions? Circle a number.



8) How hard were these questions to answer? Circle a number.



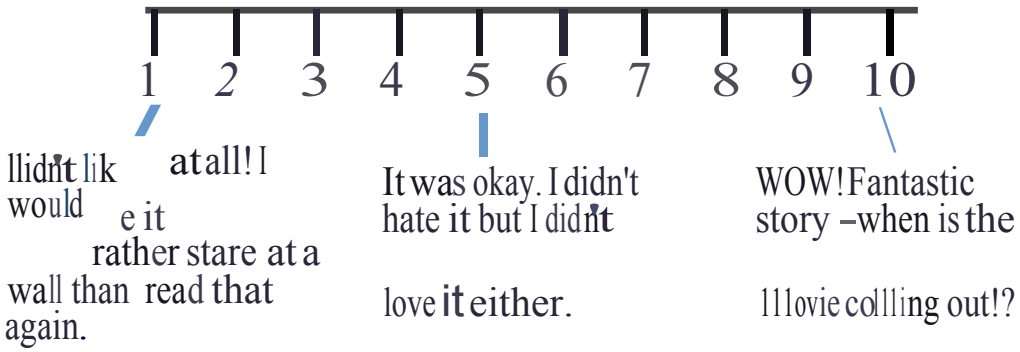
Origami Yoda and the Homerun: Causal Jnference Questions

P:____

a) Before today, had *you* ever read 'Origami Yoda & The Homerun'? Check off one box.

Yes ☐ No ☐

b) How much did you like the *story?* Circle a number.



Story Questions

1a) How does Mike feel about his softball skills?

_____

1b) How do you know?

_____

_____

2a) Why does Mike want *everyone* to forget about his crying and his strikeouts?

_____

2b) How do you know?

_____

_____

3) Why did Mike approach Origami Yoda for advice?

_____

3b) Please explain your answer:

_____

_____

P:____

4a) Near the bottom of page 29 and top of page 30, how does Mike feel about Origami Yoda's advice?

_____

4b) How do you know?

_____

_____

Sa) In fue middle of page 31, what does Mike realize about Origami Yoda's advice?

_____

Sb) How do you know?

_____

_____

6a) At the end of the stoty, how does Mike feel about other people like Tater Tot being better than him?

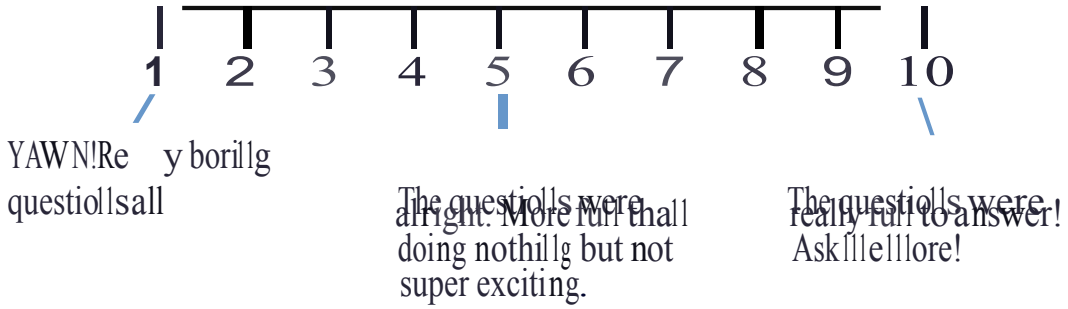
_____

6b) How do you know?

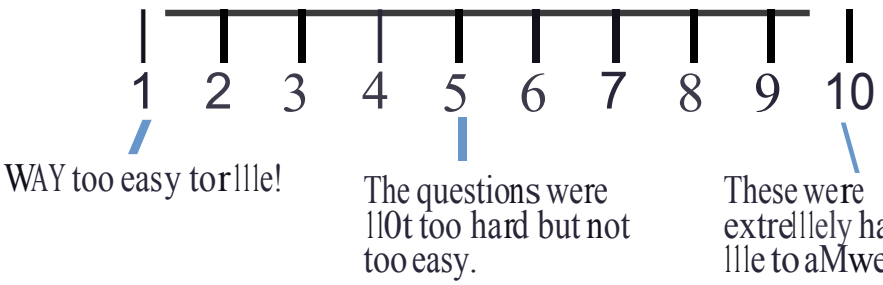
_____

_____

7) How much did you like these questions? Circle a number.



8) How hard were these questions to answer? Circle a number.



Origami Yoda and the Homerun: Embedckd Inforonce Questions

P:____

a) Before today. had you ever read 'Origami Yoda & The Homerun'? Check off one box.

Yes ○ No D

b) How much did you like the story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Uidl I' t like it at all! I would rather stare at a wall thall read that agai11.

It was okay. I didl I' t hate it but I did11't love it either.

WOW! Fa11tastic story -whe11 is the !MOVie COIMillQ OUt!?

Storv Questions

1a) Does Mike feel good about his softball skills?

_____

1b) How do you know?

_____

_____

2a) At the beginning of the story, is Mike embarrassed about how the other kids think of him?

_____

2b) How do you know?

_____

_____

3a) Why did Mike think Origami Yoda would be able to help him?

_____

_____

_____

P:___

4a) Near the bottom of page 29 and top of page 30, does Mike seem to think that Origami Yoda gave him good advice?

_____

4b) How do you know?

_____

_____

Sa) In the middle page 31, did Mike realize tbt Origami Yoda's advice was never about bitting the ball?

_____

Sb) How do you know?

_____

_____

6a) At the end of the story.is Mike upset that people like TaterTotare better than him at softball?

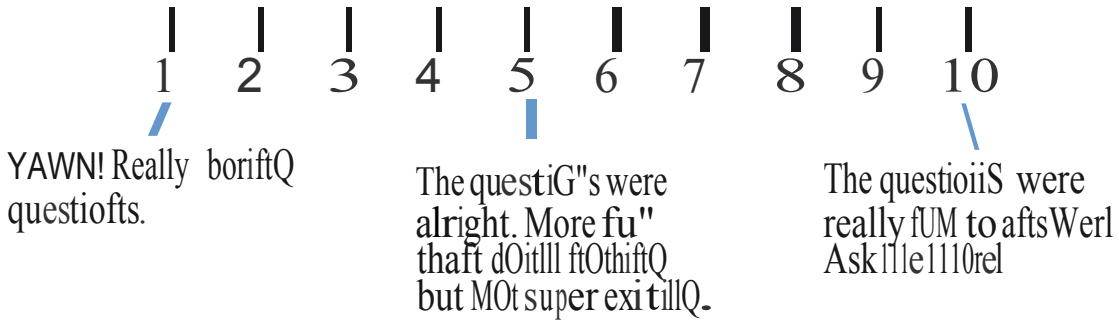
_____

6b) How do you know?

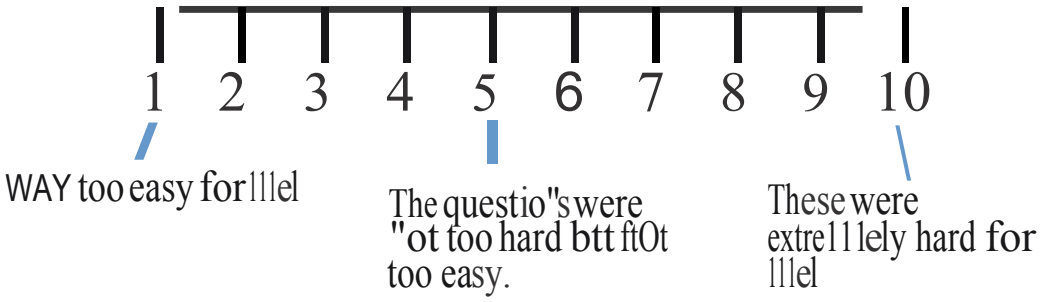
_____

_____

7) How much did you like these questions? Circle a nnmber.



8) Howbard were these questions to answer? Circlea number.



Origpmi Yodl and the Homerun: Cbntrol Condition

P:___

a) Before today. had you ever read 'Origami Yoda & The Homerun'? Check off one box.

Yes ○ **No** ☐

b) How much did you like this story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Pid11't t at all! I like i would rather stare at a wall tha11 read that agai11.

It was okay. I did11't hate it but I did11't love it either.

WOW! Fa11tastic story -whe11 is the lltOVie COIltiiiQ out!?

c) Read the instructions on the reverse side of this page to make your very own Origami Yoda! Use the paper provided in your envelope.

P:___

HOW To fOLD ORtbAMi YODA

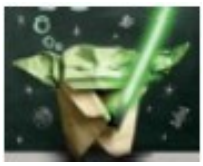
BY TOMMY

So I begged and 1111' Dlttt to tHCII ▬ .__ to make an Origami Yoda. When he finally s1 d me, I couldn't figure it out. All I could get was a blob. So Dwight taught me how to make a simpler one. You use a rectangle to start with. A half of a half sheet of paper is about right. If you can find a piece of paper that's green on one side, start with the green side down and Yoda's head and feet will be green. You have to draw his face on, but it's pretty cool and looks a lot better than the blob. Kellen drew the different steps so we wouldn't forget how to make it. Here they are . . .

Next page

FOLD DOWN A LITTLE LESS THAN AN INCH. (2 CM IS GOOD.)
FOLD THESE LINES A FEW TIMES TO GET A GOOD CREASE.
REPEAT ON THIS SIDE.
FOLD THE TOP OF THE HEAD DOWN. PULL... A LITTLE TAPE BACK HERE HELPS.
FLIP OVER...
DON'T WORRY SIDES ARE A LITTLE UNEVEN.
FOLD OUT THE EARS
CRINKLE EARS
(IF YODA HAS ANY EXTRA FEET, JUST TUCK THEM OUT OF SIGHT.)
IT'S YODA!
THIS IS THE TRICKY PART! PUSH B SO IT GOES BETWEEN A & C
IT SHOULD LOOK LIKE THIS. THE FLAPS WILL BE YODA'S EARS NOW FLIP OVER.
FOLD UP ABOUT 1 INCH FROM THE BOTTOM
(MAKE A NEW FOLD REALLY CLOSE TO THE LAST ONE. THIS WILL MAKE A ZIGZAG.
NOW FLIP IT BACK OVER.
FOLD UP ON THE LINE SO THAT A COMES TO THE MIDDLE OF YODA'S HEAD.
FOLD DOWN
FLIP OVER

Origpmi Yo<h and f1tak2speare S Head: Literal Datail Qu2stions



P:____

a) Before today, had you ever read 'Origami Yoda & Shakespeare's Head'? Check off one box.

O Yes O No

b) How much did you like this story? Circle a number.

1 2 3 4 5 6 7 8 9 10

I didn't like it at all! I would rather stare at a wall than read that again.

It was okay. I didn't hate it but I didn't love it either.

WOW! Fantastic story - when is the MOVIE COMING out!?

Story Questions

1) Whose Shakespeare head did Cassie break?

2) What did the Shakespeare head fall off of before it hit the floor?

3) About how many pieces did the Shakespeare head break into?

4) What did Cassie ask her mom to buy her at the Dollar Corral?

P:

5) What colours were the Shakespeare head that Cassie made?

_____

_____

_____

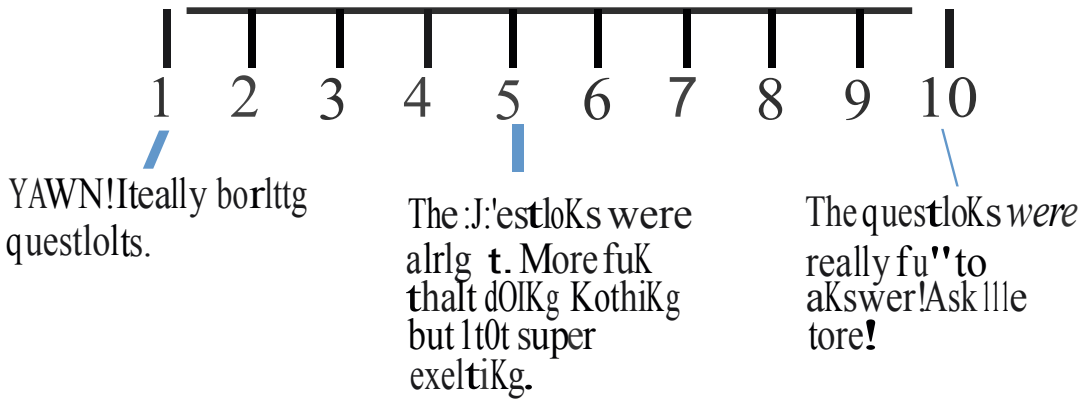
6) How can you stick the new Shakespeare head's nose back on if it falls off?

_____

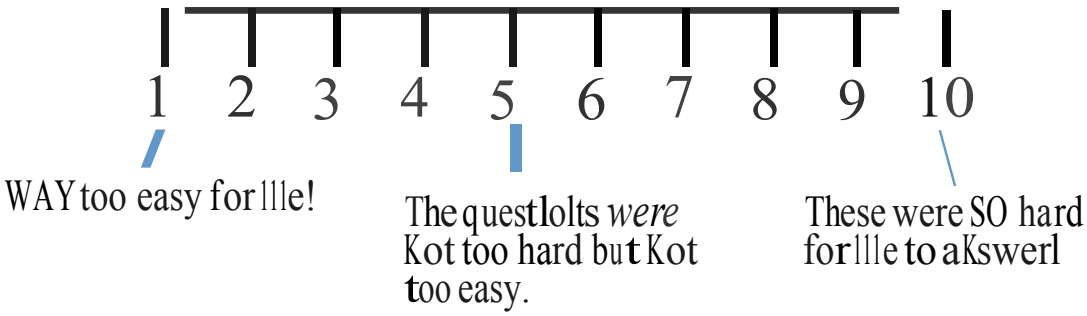
_____

_____

7) How much did you like these questions? Circle a number.



8) How hard were these questions to answer? Circle a number.



Origami Yodaand Shalozspeare's Head: Causal Injrence Questions

P = ___

a) Before today, had you ever read 'Origami Yoda & Shlkespeare's Head'? Check off one box. O O

Yes No

b) How much did you like the story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Pidt!'t like itat all! I would rather stare at a wall tha11 read that agai11.

It was okay. I didn't hate it but I did11't love it either.

WOW! Fat tastic story –whe11 is the ltiOVie C0itlillg 0Ut!?

Story Questions

1a) On page 48, why does Cassie say "Luckily, I was the only one in the room right then" ?

_____

1b) Please explain your answer:

_____

_____

2a) How does Mr. Snider feel about the missing Shakespeare head at the beginning of the story?

_____

2b) Howdoyou know?

_____

_____

3) Why was Cassie heading for the door as soon as the bell rang?

_____

3b) Please explain your answer:

_____

4a) On page SO, why did Cassie say she would be safe if she trashed the statue at home?

_____

4b) Please explain your answer:

_____

_____

Sa) Why do you think Cassie finally decided to ask Yoda for advice?

_____

Sb) Please explain your answer:

_____

_____

6a) What caused Mr. Snider to say that Cassie's Shakespeare head would have more sentimental value than the first Shakespeare head?

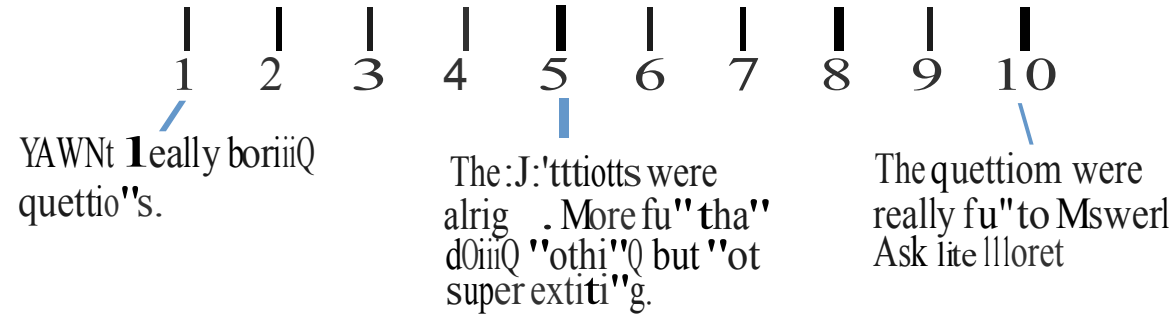
_____

6b) Please explain your answer:

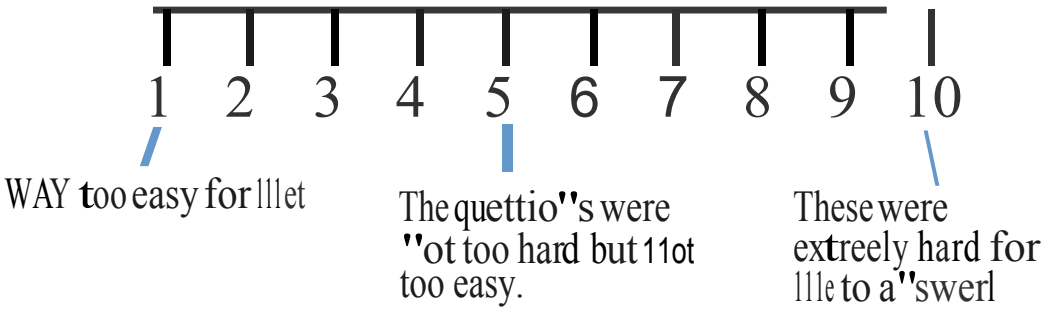
_____

_____

7) How much did you like these questions? Cin:le a number.



8) How hard were these questions to answer? Cin:le a number.



Origami Yodaand Shalozspeare's Head: Embedded Jnforence Questions

P:____

a) Before today, had you ever read "Origami Yoda & Shakespeare's Head"? Check off one box.

Yes O No O

b) How much did you like the stO'ry? Circle a number.

1 2 3 4 5 6 7 8 9 10

Pidn't like it at alii I would rather stare at a wall than read that again.

It was okay. I didn't hate it but I didn't love: it either.

WOW!Fantastic story –when is the IIIOVie COIIIing OUtl?

Story Questions

1a) Did anyone see Cassie break the statue?

_____

1b) Howdoyouknow?

_____

_____

2a) At the beginning of the story, is the teacher worried about the missing Shakespeare head?

_____

2b) How do you know?

_____

_____

3a) Was Cassie nervous when Mr. Snider was asking the class about the missing Shakespeare head?

_____

3a) How do you know?

_____

_____

4a) On page SO, did Cassie think that throwing the statue in the ll"ash at home would keep her from getting in trouble?

_____

4b) How do you know?

_____

_____

Sa) Do you think Mr. Snider appreciated Cassie's Shakespeare head?

_____

Sb) Please explain your answer:

_____

_____

6a) Even though it does not say, do you think Cassie told Mr. Snider what really happened to his Shakespeare head at the end of the story?

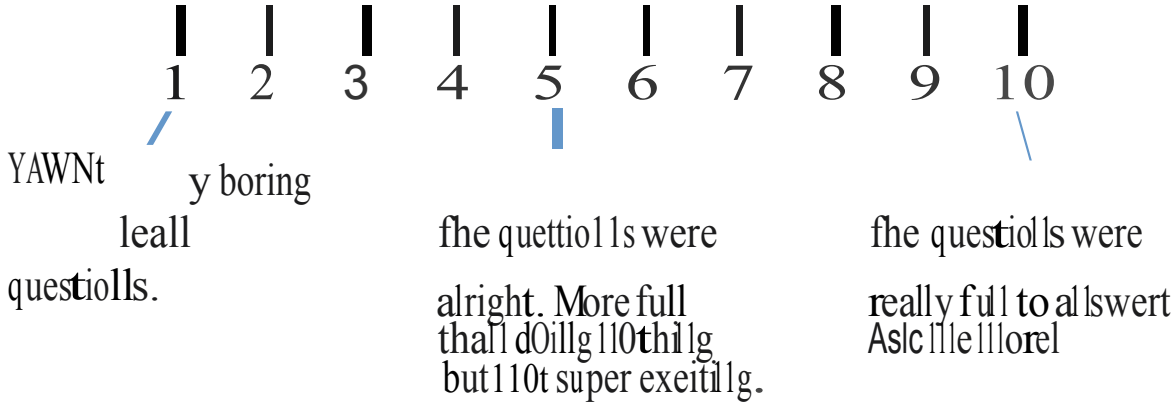
_____

6b) How do you know?

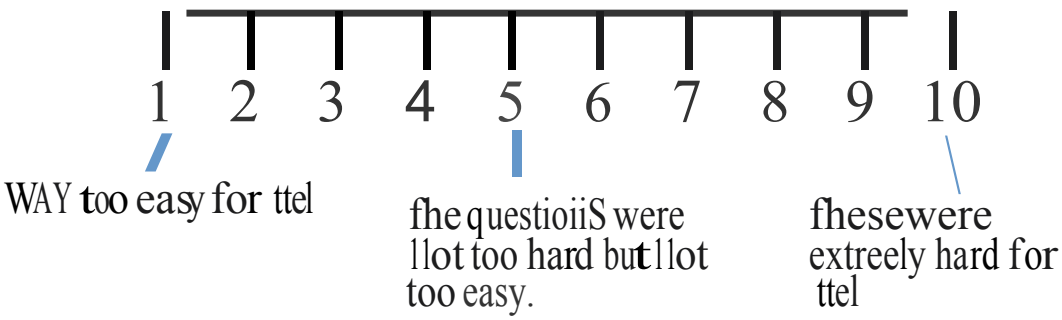
_____

_____

7) How much did you like these questions? Circle a nnmber.



8) How hard were these questions to answer? Circle a number.



Origpmi YO<h and fktk2speare's Head: Control Cbndition

P:____

a) Before today, bad you ever read 'Origami Yoda & Shakespeare's Head'? Check off one box.

Yes O No O

b) How much did you like this story? Circle a number.

1 2 3 4 5 6 7 8 9 10

1 = Vidl I't li ke it at all! I would rather stare at a wall thal l read that agail l.

5 = It was okay. I didl I't hate it but I didl I't love it either.

10 = WOW! Fal ltastic story -whel l is the llt0Vie C0lltillg out!?

c) Read the instructions on the reverse side of this page to make your very own Origami Yoda! Use the paper provided in your envelope.

P:___

HOW *To* fOLD ORtbAMt YODA

BY TOMMY

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P:

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FOLD UP ABOUT 1 INCH FROM THE BOTTOM
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FLIP OVER
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FOLD THE TOP OF THE HEAD DOWN. PSST... A LITTLE TAPE BACK HERE HELPS.
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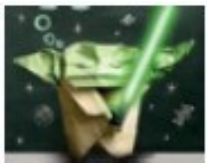
DON'T WORRY SIDES ARE A UNEVEN.
FOLD OUT THE EARS
CRINKLE EARS
(IF YODA HAS AN EXTRA FEET, JUST TUCK THEM OUT OF SIGHT.)
IT'S YODA!

Origami Yoda and the CheeHog: Literal Detail Questions



P:____

a) Before today, had you ever read 'Origami Yoda & The Cheeto Hog'? Check off one box.

Yes O No Q

b) iHow much did you like this story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Uidl'lt like it at all! I would rather stare at a wall tha11 read that agaij11.

It was okay. I did11't hate it but I did1 lt love it either.

WOW! Fa11tastic story -whe11 is the 111ovie co111il1g out!?

Story Questions

1) Where did the sixth graders go on their field trip?

2) iHowmuch did the bags of snacks cost at the zoo?

3) Who gave Quavondo a ride down Route 24 to the Food Lion?

4) iHowmany children are in grade 6?

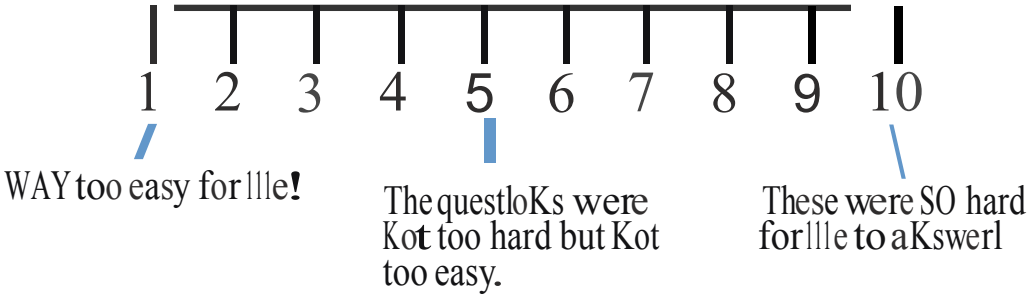
P:

5) What is Mr. Good Clean Fun's puppet?

6) After giving out the Cheetos, where did Quavondo spend the day?

7) How much did you Like these questions? Circle a number.

8) How hard were these questions to answer? Circle a nnmber.



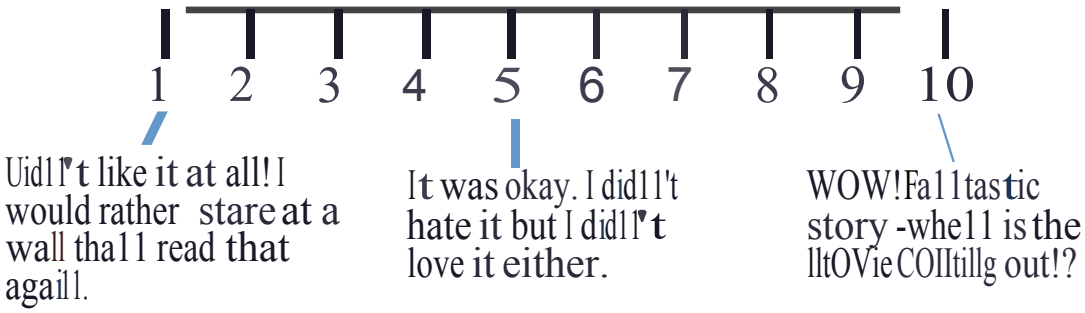
Origami Yoda and the CheeHog: Causal Jnforence Questions

P:___

a) Before today. had you ever read 'Origami Yoda & The Cheeto Hog'? Check off one box.

Yes O No D

b) How much did you like the story? Circle a number.



Storx Questions

1a) How did Mr. Howell feel about Quavondo buying Cheetos?

_____

1b) How do you know?

_____

_____

2a) Why wouldn't anyone lend Quavondo an eraser in class?

_____

2b) Please explain your answer:

_____

_____

3) At the bottom of page 67, how did Quavondo react to Origami Yoda's suggestion of bringing Cheetos to everyone at the assembly?

_____

3b) How do you know?

_____

_____

4a) At the top of page 71. why does Quavondo insist on following Yoda's orders about not giving out Cheetos until the assembly?

4b) Please explain your answer.

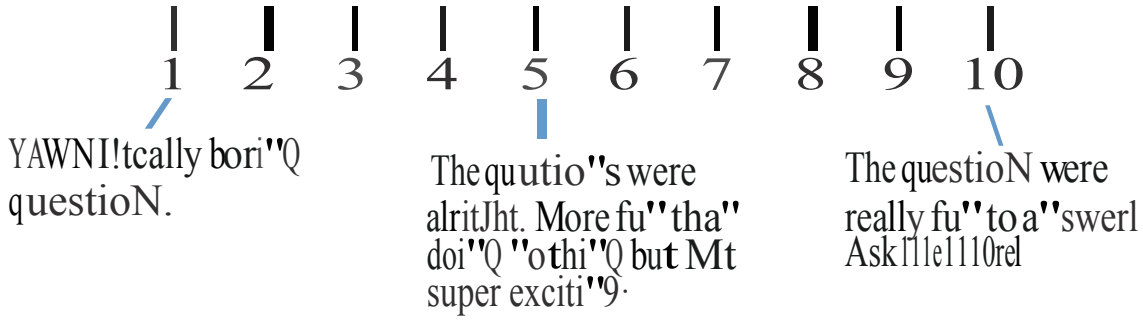
Sa) How did Quavondo insult Mr. Good Oean Fun?

Sb) Please explain your answer.

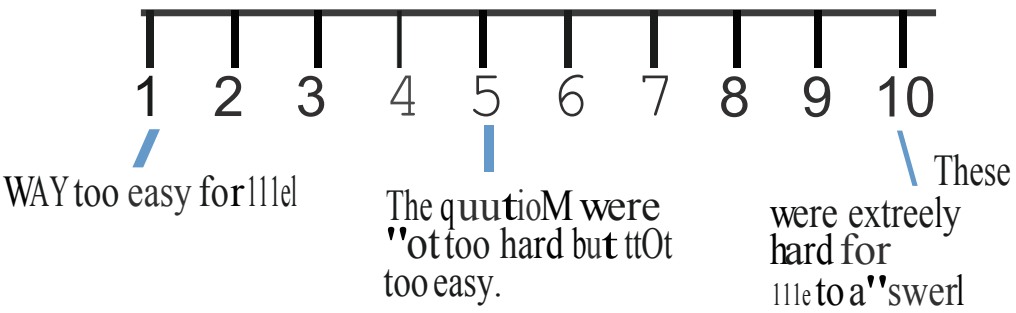
6a) Why did Quavondo spend the rest of the day in the office after the assembly?

6b) How do you know?

7) How much did you like thOle questions? Circle a number.



8) How hard were these questions to answer? Cird.e a number.



Origpmi Yodl and the Cheeto Hog: Embedded Inforence Qu2stions

P:____

a) Before today, had you ever read 'Origami Yoda & The Cheeto Hog'? Check off one box.

Yes O No D

b) How much did you like the story? Circle a number.

1 2 3 4 5 6 7 8 9 10

Uidl't like it at all! I would rath er stare at a wall thall read that agaill.

It was okay. I didl't hate it but I didl't love it either.

WOW! Falltastic story -whell is the !MOVie COIMillQ OUt?

Storx Questions

1a) Was Mr. Howell happy about Quavondo buying Cheetos?

_____

1b) How do you know?

_____

_____

2a) Did Quavondo eating all his Cheetos affect what his friends shared with him?

_____

2b) How do you know?

_____

_____

3a) At the bottom of page 67, does Quavondo think Origami Yoda's plan to bring everyone Cheetos during the assembly is a good idea?

_____

3a) How do you know?

_____

_____

4a) At the top of page 71.does Quavondo think he must follow Origami Yoda's exact instructionsto fix the problem?

_____

4b) How do you know?

_____

_____

Sa) Doyou think Mr.Good Oean Fun was ok with what happened during the assembly?

_____

Sb) How do you know?

_____

_____

6a) Does Quavondo think Origami Yoda's advice worked atthe end of the story?

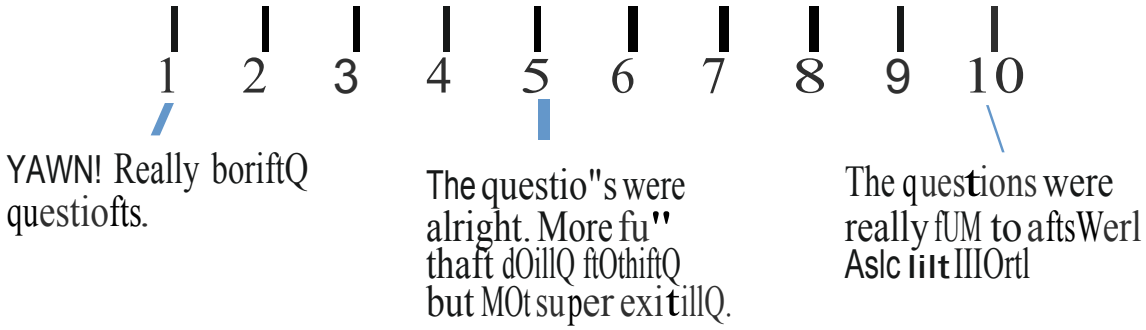
_____

6b) How do you know?

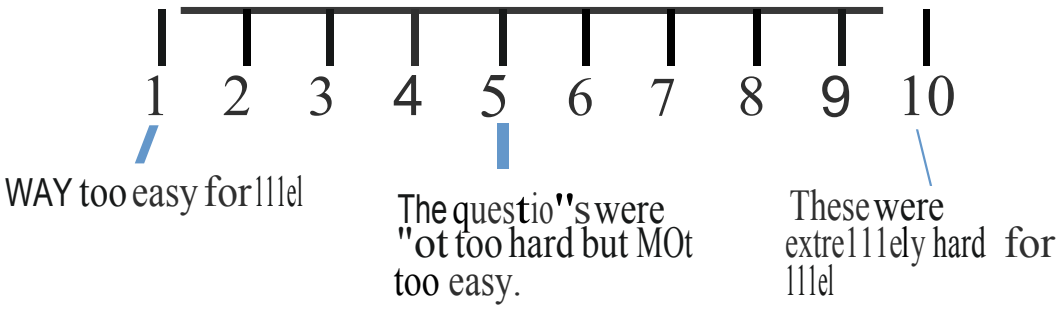
_____

_____

7) How much did you like these questions?Grcle a number.



8) Howhard were these questions to answer? Circlea number.



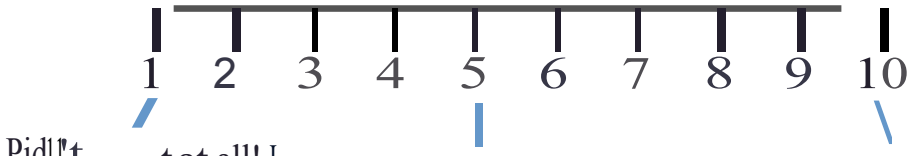
Origpmi Yodl and the Cheeto Hog: Cbntrol Condition

P:____

a) Before today. had you ever read 'Origami Yoda & The Cheeto Hog'? Check off one box.

Yes O No O

b) How much did you like this story? Circle a number.



Pidl't tat all! I like i r stare at would rathe a wall tha11 read that agai11.

It was okay. I did11't hate it but I did11't love it either.

WOW! Fa11tastic story -whe11 is the !MOVie COIMiiiQ out!?

c) Read the instructions on the reverse side of this page to make your very own Origami Yoda! Use the paper provided in your envelope.

HOW To fOLD ORtbAMt YODA

BY TOMMY

So I begged and begged Dwight to teach me how to make an Origami Yoda. When he finally showed me, I couldn't figure it out. All I could get was a blob. So Dwight taught me how to make a simpler one. You use a rectangle to start with. A half of a half sheet of paper is about right. If you can find a piece of paper that's green on one side, start with the green side down and Yoda's head and feet will be green. You have to draw his face on, but it's pretty cool and looks a lot better than the blob. Kellen drew the different steps so we wouldn't forget how to make it. Here they are . . .

Next page

FOLD DOWN A LITTLE LESS THAN AN INCH. (2 CM IS GOOD.)
FOLD THESE LINES A FEW TIMES TO GET A GOOD CREASE.
THIS IS THE TRICKY PART! PUSH B SO IT GOES BETWEEN C + D
IT SHOULD LOOK LIKE THIS. THE FLAPS WILL BE YODA'S EARS. NOW FLIP OVER.
FOLD UP ABOUT 1 INCH FROM THE BOTTOM
MAKE A NEW FOLD EXACTLY CLOSE TO THE LAST ONE.
THIS WILL MAKE A ZIGZAG.
NOW FLIP IT BACK OVER.
FOLD UP ON THE LINE SO THAT A COMES TO THE MIDDLE OF YODA'S HEAD.
FOLD DOWN
FLIP OVER
FOLD ALL THE WAY DOWN
DON'T WORRY SIDES ARE A LITTLE UNEVEN.
FOLD OUT THE EARS
CRINKLE EARS
(IF YODA HAS AN EXTRA FEET, JUST TUCK THEM OUT OF SIGHT.)
REPEAT ON THIS SIDE.
FOLD THE TOP OF THE HEAD DOWN.
FLIP OVER
A LITTLE TAPE BACK HERE HELPS
IT'S YODA!

Appendix E Question

Scoring Rubrics

Literal Detail Question Scoring Rubric

Score	Description	Example Answer
0	-Does not answer question -Answer is wrong	Blank
1	-One element of the answer is correct	*The PTA takes place on the stage or something.* (Answer: In the school cafeteria.)
2	-Answer is mostly correct excludes or confuses a major element	*Harvey, Kellen, Lance, Mike, and Quavondo* (Answer: Mike and Kellen)
3	-One element of the answer is incorrect	*Mrs. Snider* (Answer: Mr.Snider)
4	-All elements of the answer are correct	*He bumped into Jennifer, the popular school girl.*

Causal Inference Question Scoring Rubric

Sample Question: Why does Quavondo spend the rest of the day in the office after the assembly? How do you know?		
Score	Description	Example
0	-Does not answer question -Answer is wrong and has no/false textual support	*Because they have more swag.* *Swag is something you can't beat.*
1	-Answer does not contain an inference and is made up of factual information -A poor quality inference is made but student does not provide support for answer or support is unclear	*Because he had cheetos.*
2	-A good quality inference is made but student does not provide support for answer or support is very unclear -An adequate inference but is not as specific or clear as it should be	*He gave Cheetos to everyone. It's in the book.*
3	-A good quality inference is made and is completely supported -A high quality inference is made and is partially supported	*Quavondo spent the rest of the day in the office because he brought Cheetos in the assembly.*
4	-A high quality inference is made and complete textual support or background knowledge is provided	*Because he did something wrong.* *He gave everyone food in the gym.*

Embedded Inference Question Scoring Rubric

Sample Question: Was Cassie nervous when Mr. Snider was asking the class about the missing Shakespeare head?		
Score	Description	Example
0	-Does not answer question -Answer is wrong and has no/false textual support	*I do not know this question.*
1	-Answer correctly confirms or disconfirms inference in the question, but student does not provide support for answer or support is unclear -Answer does not correctly confirm or disconfirm inference in the question, but limited textual support is provided	*Yes. Because I read the chapter.*
2	-Answer correctly confirms or disconfirms inference in question, and partial support is provided	*Yes, because she thought Mr. Snider would find out. Cassie said it herself.*
3	-Answer correctly confirms or disconfirms inference in question, and is well but not completely supported	*Yes. She's scared to get in trouble.*
4	-Answer correctly confirms or disconfirms inference in the question, and complete textual support or background knowledge is provided	*Yes, she was nervous. Because she was the one that broke the head.*

Appendix F

Retell Checklists

Origami Yoda & The Night of Fun

Details	
Friend	
Kellen	
Cafeteria	
April	
No slow dances	
Jennifer	
Popular girl	
Hannah	
Sarah	
Harvey makes fun	
Friends tell Tommy not to follow Yoda	
Mark	
Grade seven	
Kisses Hannah	
Doesn't like PDA	
Dwight tells Tommy it's a good thing he didn't go	
Harvey doesn't believe in Yoda	
Total Details	
Main Ideas	
Tommy	
Friend	
Harvey	
Fun night/dance	
Doesn't like to dance	
Wants to dance	
Sits on stage	
Friend	
Dwight	
Dwight is strange/weird	
Has Yoda puppet	
Fortune teller/Gives advice	

Tried to dance one time	
Bumped into girl	
Embarrassed himself at dance	
Knocks over drink	
Cleans up with shirt	
Asks girl to dance	
She says no	
Tommy is too shy to ask girls to dance	
Tommy's friends think he should ask girl to dance	
Tommy is thinking of asking a girl to dance	
Tommy likes a different girl	
Dwight makes him ask Yoda	
He asks Yoda	
Yoda says not to rush in ("Rush in foolds do")	
Try to figure out what Origami Yoda is saying	
Tommy waits	
Older student comes	
Tommy doesn't ask the girl to dance	
Tommy is happy he didn't go	
Tommy kind of believes in Origami Yoda	
Total Main Ideas	
Total Score (Main Ideas + Details)	

Origami Yoda & The Homerun

Details	
Teacher	
Mrs. Toner	
Played wiffle ball	
Played in grade one	
Two types of tears	
Angry tears and boohoo tears	
Tommy	
Boy good at softball	
Mike remembers Origami Yoda helped boy at dance	
Tater Tot	
Others laugh at Origami Yoda's advice	
Dwight says Origami Yoda's not finished giving advice	
Mike gets two strikes	
He has angry tears	
Mike gets two balls	
Voice in his head says "swing"	
Total Details	
Main Ideas	
Boy	
Mike	
Boy	
Dwight	
Plays softball in PE	
Does not like softball	
Always strikes out	
Bad at softball/can't hit	
Wants to hit ball/homerun	
Mike would cry	
Mike would get mad	
Mike gets made fun of	
Mike asks Origami Yoda for advice	
Origami Yoda says other players are better	
Mike gets mad	
He doesn't understand the advice	

Origami Yoda says let of go feelings/ hate and revenge lead to dark side	
Mike goes up to bat	
Remembers what Origami Yoda says	
Thinks Origami Yoda might be right about clearing mind	
Strikes out/does not hit ball	
Does not cry	
Does not get mad	
Still confused about Origami Yoda's advice	
Origami Yoda points out that he does not cry	
Realizes Origami Yoda is right	
Does not care that other players are better than him	
Still striking out now	
Does not cry/get mad anymore	
Total Main Ideas	
Total Score (Main Ideas + Details)	

Origami Yoda & Shakespeare's Head

Details	
New student	
Mr. Snider	
Thinks statue is weird	
Don't read Shakespeare in class	
Other boys fool around	
Boys don't knock down statue	
It falls off windowsill	
Breaks in six pieces	
She takes her books out of backpack	
Teacher says if they're playing it joke, it's okay	
Teacher says to bring it back tomorrow	
Cassie takes bus home	
Dwight notices her books are not in her backpack	
Dwight notices backpack is still full	
Calls mom	
Asks mom to buy fake play-doh	
It costs ten dollars	
The new statue is blue and red	
The nose falls off sometimes	
Stick nose back on by licking it	
Total Details	
Main Ideas	
Girl	
Cassie	
Teacher	
Has statue/head	
Shakespeare	
Cassie is alone in classroom	
Walks by statue	
Statue falls	
Statue breaks	
She's scared to get in trouble	
Put statue pieces in backpack	
Teacher asks where it is	
Teacher says it has sentimental value	
Cassie thinks about throwing it out in trash	
Boy	
Dwight	

Dwight tells her to ask Origami Yoda for advice	
Cassie doesn't want to	
Eventually asks Origami Yoda for advice	
Yoda tells her that she must make a new one	
Cassie makes new Shakespeare head	
Brings it to Mr. Snider/to school	
Mr. Snider Laughs/is not mad	
Mr. Snider says it has more sentimental value than old one	
Cassie does not get in trouble	
Total Main Ideas	
Total Score (Main Ideas + Details)	

Origami Yoda & The Cheeto Hog

Details	
Mr. Howell	
On fieldtrip	
At the zoo	
Grade six class	
116 students	
Teacher tells them not to buy anything	
Teacher didn't specify vending machine	
Quavondo puts money in vending machine	
$2 for cheetos	
Teacher gets mad	
Teacher says to press coin return but it doesn't work	
Dwight refuses to give Quavondo advice	
Brother	
Quavondo goes to store	
120 packs of cheetos	
Uses money from grandma	
Uses money from brother	
Stuff bags in old schoolbag	
Stuff bags into jacket	
Brings cheetos to school	
Quavondo runs down the hall	
Mr. Good Clean Fun	
Monkey puppet	
Students have to throw bags out	
Writes apology letter	
Total Details	
Main Ideas	
Boy	
Quavondo	
Quavondo buys cheetos	
Other kids want	
Quavondo doesn't share/ stuffs them in mouth	
Everyone starts calling him Cheeto Hog	
Classmates won't share anything with him	
Boy	
Dwight	
Quavondo asks Origami Yoda for advice	

Origami Yoda talks to Quavondo	
Tells him to buy cheetos for all sixth grade	
Tells him to bring cheetos to assembly	
Quavondo buys cheetos	
Origami Yoda tells him to pass them out quickly	
Quavondo insists on giving them out at assembly	
Assembly guy is on stage	
Quavondo passes out cheetos	
Teachers intervene	
Quavondo gets sent to office for the day	
People stop calling him Cheeto Hog	
Total Main Ideas	
Total Score (Main Ideas + Details)	

Appendix G
Examiner's Script

Hi everyone, I had the chance to work with most of you one on one last week, but starting today we are going to be reading short stories in your classroom. The stories are about 8-10 pages long and you're going to be reading them silently to yourself. Once you're done, you'll have a different activity to do. Some of you will be answering questions and some of you will be making something but everyone will have a chance to do every activity over the next few weeks.

The stories that I have chosen for you are from a really funny book called "The Strange Case of Origami Yoda". I chose it because it's about students your age.
It's important that while we work on this project together, you do not read the book. Once we are done the project though, I will be giving you books as my way of saying thank you for your help. Everyone will get to pick a book for the classroom library, and then get to choose an additional book to keep. I have some copies of the Origami Yoda book that you will be able to pick, but until then, I ask you not to read this book.

Before we get started today, I am going to read you the introduction of the book. Listen carefully, because it will help you understand the rest of the stories you will be reading over the next few weeks. Once I'm done, I will give you the first story to read with an activity to complete in an envelope. It is important that you read the entire story before moving on to the activity. For those of you who are answering questions about the story, you are allowed to look in the text for the answers but I will be using the stories with other kids in other school so please do not write any answers or anything on them.

Appendix H Sample of Story Retells

Literal Detail Condition: Origami Yoda & Shakespeare's Head

So a girl named Cassie, she was in her class and her teacher has a Shakespeare head on the windowsill, and she knocked it over, and it broke into six pieces. So she put it in her backpack, and on the bus, she was sitting with Dwight, and Dwight told her, like asked her about her schoolbag –asked her about her schoolbag and all that. And then, she's like, "How did you know?" Then he's like, "Well you're holding your books instead of in your bag and your bag still looks pretty full." So yeah, he like, she asked Origami Yoda like what to do, and he said to like build a new one. So she asked her mom to build a… like buy fake dryable play-doh but it was blue and red. So the Shakespeare head looked red with a blue wig. And since the Shakespeare head was like valuable -or something like that- to the teacher, it's even more valuable because it was from a student.

Retell Score=47%

Control Condition: Origami Yoda & The Homerun

They were –someone broke Shakespeare's head, and they were blaming it on… I don't know who it was, but they were blaming it on him. And then… yeah, I totally forget.

Retell Score =6%