

**EFFECT OF GRAPHIC ORGANIZERS ON THE READING  
COMPREHENSION OF AN ENGLISH LANGUAGE LEARNER  
WITH A LEARNING DISABILITY**

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**ABSTRACT**

Many researchers have investigated the effect of using graphic organizers on the reading comprehension of general education students and students with a learning disability. There is a dearth of research that investigates the use of graphic organizers on the reading comprehension of English language learners with a learning disability. This case study seeks to extend the literature on graphic organizers by examining their effect on the reading comprehension of one female public middle school student who is an English language learner with a learning disability. In order to maintain a small group instructional setting, two male public middle school students who are English language learners without disabilities were also included in the study. The findings suggest that graphic organizers are an effective reading comprehension intervention for the ELL with LD and ELL participants. Positive teacher perceptions of the intervention are also reported.

**INTRODUCTION**

The accountability movement in the United States has led to the creation of several governmental policies in an attempt to ensure that all children receive quality education. The No Child Left Behind (NCLB) Act of 2001 and the Individuals with Disabilities Education Act (IDEA) of 1997 are the two major initiatives that have led to nationwide reform in the public Kindergarten through 12<sup>th</sup> grade (K-12) educational system. The NCLB Act of 2001 is the reauthorization of the Elementary and Secondary Education Act, which is also known as the Improving America's Schools Act (Abedi, 2006). The intent of these acts is to ensure that all students are measured according to the "same high standards and are included in the indicators

used for school accountability” (Abedi, 2006, p. 2282). The performance of all students, as well as the performance of each subgroup, is mandated to be examined by the federal government. In order to improve academic achievement of students who perform below grade level standards, instructional practices are being examined to assess their effectiveness in reaching the various subgroups of students.

Two of these subgroups are (a) English language learners (ELLs) and (b) students with disabilities. However, the population of students who fall into the overlap of these two categories, ELLs with disabilities, is not classified as a separate subgroup in these initiatives. Therefore, states do not have to report the performance of this population as a separate category. In addition, statewide assessments are based on state content standards, yet these standards do not typically address which instructional strategies should be used with ELLs with disabilities (Shyyan, Thurlow, & Liu, 2008). “States’ content standards are the basis not only for their assessments but also for their instruction and curricula” (Shyyan et al., 2008, p. 146). Research is increasingly showing that ELLs with disabilities have an overall performance level on statewide assessments that is below the performance level of the broader subgroup of students with disabilities (Barrera, Liu, Thurlow, & Chamberlain, 2006). Research is needed to determine how this poor performance may be improved by instruction that meets the diverse needs of this student population.

### *English Language Learners with Disabilities*

An ELL is a student who has difficulty reading, writing, speaking or understanding English based on their language background, including birth outside of the U.S. or a language other than English being their dominant language (Rhodes, Ochoa, & Ortiz, 2005). Disabilities identified under IDEA include: (a) mental retardation; (b) a hearing impairment (including deafness); (c) a speech or language impairment; (d) a visual impairment (including blindness); (e) a serious emotional disturbance; (f) an orthopedic impairment; (g) autism; (h) traumatic brain injury; (i) a specific learning disabilities; (j) deaf-blindness; and (k) multiple disabilities (Individuals with Disabilities Education Act, 2004). The term specific learning disability does not “include children who have learning problems that are primarily the result of environmental, cultural or economic disadvantage” (Knoblauch & Sorenson, 1998, p. 4).

ELL students with learning disabilities (LD) have significant difficulty acquiring and using listening, speaking, reading, writing, reasoning, and/or mathematical skills (Ortiz, 1997). It is important to note that students with LD are a heterogeneous group and the characteristics of each student's LD may vary greatly (Garcia & Tyler, 2010). However, ELLs with reading-related disabilities often have problems decoding texts due to difficulties with letter recognition and letter-sound correspondence, and often have vocabulary and comprehension skills that are below grade level (Garcia & Tyler, 2010). "Depending on the specific areas of reading affected by their disability, they may also experience greater difficulty with decoding new vocabulary, visual or auditory processing, retaining new information, and/or organizing ideas" (Garcia & Tyler, 2010, p. 116).

Of the ELLs in K-12 in 2003, approximately 9% also had an identified disability and received special education services (Liu & Anderson, 2008). The disability category under IDEA with the largest number of students is the category of learning disabilities. In 2008, the learning disability category made up 39% of the entire population of students with disabilities (National Center for Education Statistics [NCES], 2010a). Approximately 80% of students with learning disabilities are in need of special education services for reading (International Dyslexia Association, 2007).

In the early elementary school years, reading instruction is focused on teaching students how to read. However, by the time students enter middle school, they are generally expected to have proficient reading skills and reading instruction has shifted to reading to learn (Garcia & Tyler, 2010). Fluency, vocabulary, and comprehension are especially important when students have to read to learn. In middle school, reading material is often the delivery method for curriculum content which often leads to poor performance by ELLs with LD on reading comprehension assessments (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006). Also, the middle school level is an important area for research because studies have shown that as the ages of students increase, the likelihood of dropping out of school also increases. Statistics show that approximately 40% of students with disabilities do not receive a high school diploma (Barrera et al., 2006). By providing more effective instruction to students with disabilities in the middle school years, the high school completion rate for these students could be improved (Klinger, Artiles, & Barletta, 2006).

### ***Purpose Statement***

In this paper, I (a) examine the research on effective instructional strategies for improving the reading comprehension of ELLs with LD in middle school, (b) examine the research on the use of graphic organizers for improving reading comprehension, and (c) report the results of a case study examining the effect of graphic organizers on the reading comprehension of an ELL with LD in middle school.

## **REVIEW OF LITERATURE**

Reading comprehension is the process of constructing meaning from a text and involves the complex coordination of several processes, including “decoding, word reading, and fluency along with the integration of background knowledge and previous experiences” (Klinger & Geisler, 2008, p. 65). ELLs’ reading comprehension can be influenced by their vocabulary knowledge, word recognition skills, understanding of text structure, oral English language proficiency, and cultural background differences (Klinger & Geisler, 2008; Francis et al., 2006). Vocabulary knowledge has been shown to be highly related to ELLs’ reading comprehension ability (Klinger, et al., 2006). Students who struggle with reading tend to place more focus on the “surface aspects of reading, use fewer comprehension strategies, tap less into background knowledge, and have more limited vocabularies” (Orosco, de Schonewise, de Onis, Klinger, & Hoover, 2008, p. 16). Struggling readers often “fail to link new information with prior knowledge or monitor their comprehension of what they are reading” (Narkon & Wells, 2010, p. 2). An instructional strategy is “a purposeful activity to engage learners in acquiring new behaviors or knowledge” (Shyyan et al., 2008, p. 148). Many students with LD are not efficient in learning because they are not aware of their own cognitive processes and do not know how to determine the specific demands of learning tasks. Their lack of knowledge of how and when to use comprehension strategies appropriately, keeps these students from taking full advantage of their own abilities (Klinger & Vaughn, 1996).

### ***Reading Comprehension Intervention Strategies***

Shyyan, Thurlow, and Liu (2008) investigated which instructional strategies are deemed to be effective for ELLs with disabilities by educators and students. The researchers used the Multi-

Attribute Consensus Building process, which is a quantitative research approach designed to determine a small group's opinion about the importance of specified items (Shyyan et al., 2008). Surveys were used to elicit the opinions of 42 educators and 25 students with disabilities in a Midwestern state. The researchers found that both the educators and students valued the three reading instructional strategies of (a) fluency building, (b) direct teaching of vocabulary, and (c) practicing paraphrasing and retelling as important strategies to use with ELLs with disabilities. Also, the educators identified two additional strategies as important for reading instruction: (a) relating reading to students' previous experiences and (b) chunking and questioning aloud.

A similar study by Thurlow, Shyyan, Barrera, and Liu (2008) examined the instructional strategies recommended for ELLs with disabilities by middle school teachers in schools meeting the NCLB's Annual Yearly Progress (AYP) requirements. The researchers used the Delphi survey process to gather combined information from a group of participants with expertise in the area being researched. The participants included 18 educators from states with high ELL populations and 21 educators from states with low ELL populations. The survey process resulted in the identification of seven important reading instructional strategies: (a) relating reading to students' previous experiences, (b) using visual aids, (c) activating background knowledge, (d) chunking and questioning aloud, (e) pre-reading and prediction about the text, (f) using vocabulary in context, and (g) retelling in groups.

In a study on reading comprehension instruction, Klinger and Vaughn (1996) examined the effectiveness of reciprocal teaching on the comprehension of 26 Spanish-speaking ELLs with LD in middle school. In the reciprocal teaching model, developed by Palincsar and Brown (1984), students are taught four comprehension strategies through the use of teacher modeling and gradually the students take on the role of teaching the strategies to other students. The four strategies are (a) prediction, (b) summarization, (c) question generation, and (d) clarification. In Klinger and Vaughn's study, the students read English texts and were encouraged to discuss with each other in either their first language (L1) or their second language (L2). The researchers found that these ELL students with LD showed statistically significant improvement in their reading comprehension through the use of the reciprocal teaching strategy.

Chunking and questioning aloud (CQA) is a reading instructional strategy that has been investigated for its use in improving reading comprehension. CQA has been identified as an effective strategy for ELLs with LD by teachers experienced in working with this student

population (Thurlow, Minnema, & Treat, 2004). This strategy uses “the process of reading a story aloud to a group of students and stopping after certain blocks of text to ask the students specific questions about their comprehension of the story and some key features of the text” (Thurlow et al., 2004, p. 34). In a study examining the effectiveness of CQA by Barrera et al. (2006), single-case studies were conducted with two teachers and four students. One teacher, a speech-language specialist, implemented the CQA strategy with a 6<sup>th</sup> grade Somali student in Minnesota over a period of 2.5 months. While the other teacher, a special educator, worked with three 7<sup>th</sup> grade Mexican-American students in Texas over a period of 36 school days. The four students were all identified as ELLs with LD prior to the beginning of the study. The students had different academic achievement, oral language, and reading proficiency levels. All but one of the students were assessed as having below grade level reading proficiency. “In most cases, the students in this study improved their learning of the CQA strategy while either maintaining or slightly improving their literal reading comprehension” (Barrera et al., 2006, p. 19), which was measured using grade-level reading assessments. This study adds to the evidence-based research literature on instructional strategies that may prove to be effective with ELLs with LD.

Gersten, Baker, and Marks (1998) propose that teachers need to provide comprehensible input to ELLs with LD through the use of schema activation, clarification of unclear and difficult content, and graphic organizers. Comprehensible input is the theory, put forth by Krashen (1982), that learners will acquire language best when they are exposed to language that is slightly more difficult than they can easily understand. Gersten et al. (1998, p. 11) state that ELLs with LD should have “meaningful access through comprehensible input” because they “are entitled to instruction that deals with grade-appropriate content, concepts, and skills.” Meaningful access can be provided to students through the use of effective instructional strategies in combination with materials that are at an appropriate level for the student. One such strategy is the use of graphic organizers that allow students to visually access and understand information (Gersten et al., 1998).

### ***Graphic Organizer Research***

Graphic organizers are visual representations of information from a text that depict the relationships between concepts, the text structure, and/or key concepts of the text (Griffin & Tulbert, 1995; Jiang & Grabe, 2007; Kim, Vaughn, Wanzek, & Wei, 2004; Tang, 1992). Ausubel

(1960, 1963) is credited as being the originator of graphic organizers, which he called structured overviews. Ausubel hypothesized that new learning is affected by a learner's prior knowledge, which Ausubel termed cognitive structure. He proposed that structured overviews, or graphic organizers, would facilitate learning by giving an organized framework for the learner's prior knowledge to be related to new information (Ausubel, 1963; Griffin & Tulbert, 1995; Kim et al., 2004). The research on graphic organizers is often based on the assumption that all texts have organizational patterns and there are a small number of patterns that are frequently found in texts, including "cause-effect, problem-solution, comparison-contrast, classification, definition, process, argument-reasoning, for-against, time sequence, and description" (Jiang & Grabe, 2007, p. 43). Graphic organizers provide a means of teaching students how to recognize text structures. "Students are expected to comprehend texts better when shown visually how information in the text is organized" (Jiang & Grabe, 2007, p. 39). Gersten and Baker (2003) propose that for ELLs with LD who have to learn content knowledge and acquire language at the same time, graphic organizers "give students a concrete system to process, reflect on, and integrate information" (p. 106).

Many researchers have investigated the effect of using graphic organizers on the reading comprehension of general education students and students with LD. A fewer number of studies have been conducted investigating their use with ELLs. In my review of research, however, I was unable to locate any empirical studies that investigated the use of graphic organizers on the reading comprehension of ELLs with LD. Despite this lack of empirical evidence on the use of graphic organizers with ELLs with LD, my review of reading comprehension intervention strategies indicated that Gersten, Baker, and Marks (1998) recommend the use of graphic organizers with ELLs with LD. In addition, the activation of prior knowledge and the use of visual aids with ELLs with LD have been identified as important reading instructional strategies (Thurlow, Shyyan, Barrera, & Liu, 2008).

***Graphic organizer research on students with LD.*** Kim, Vaughn, Wanzek, and Wei (2004) conducted a meta-analysis of research on the effect of graphic organizers on the reading comprehension of students with LD with studies that ranged from 1963 to 2001. The authors found 21 studies that met their selection criteria which were as follows: (a) a group design intervention, (b) on K-12 students with LD, (c) a treatment-comparison or a single-group design, (d) graphic organizers were the independent variable, and (e) reading comprehension was a

dependent variable (Kim et al., 2004). Kim et al. found that when students with LD are taught to use graphic organizers, whether by their teacher or a researcher, the students' reading comprehension improved. All of the reading comprehension assessments that showed large effect sizes were researcher-developed content tests. Of the 21 studies included in the meta-analysis, only two included standardized testing measures and neither resulted in statistically significant improvements. Therefore, it was not shown whether graphic organizer interventions can result in improvements in reading comprehension measures of standardized assessments. The use of graphic organizers in treatment-comparison studies was found to be related to large effect sizes across grade levels, (i.e., within studies that examined either elementary, middle school, or high school students with LD). Also, teacher-, researcher-, and student-generated graphic organizers all resulted in large effect sizes. This meta-analysis indicates that instruction on the use of graphic organizers, overall, can be an effective reading comprehension intervention with students with LD; however, it remains unclear as to their effectiveness in improving reading comprehension on standardized assessments.

DiCecco and Gleason (2002) examined the effect of graphic organizers on the learning of relational knowledge from social studies texts for 24 students with LD in middle school. Relational knowledge is the understanding of the relationships that link key concepts within a text (DiCecco & Gleason, 2002). The researchers used a pretest-posttest control group design for the study. Both the graphic organizer group and the control group received reading instruction as well as summary writing instruction over a one month (20 sessions) treatment period. The independent variable in the study was instruction on using graphic organizers. The findings of the study were a statistically significant advantage for the recall of relational knowledge statements in written essays by the graphic organizer intervention group in comparison to the control group after 20 sessions of instruction. An interesting finding was that on measures of factual content knowledge in multiple-choice tests and quizzes, there was no main effect for condition. This indicates that care must be taken in the assessment measures used to determine the effect of graphic organizers as their positive effects may not be visible in the recall of factual knowledge.

***Graphic organizer research on ELLs.*** In a study examining the effect of graphic organizers on the reading comprehension of 45 seventh-grade English as a second language (ESL) students, Tang (1992) showed that the use of graphic organizers as a visual aid for ESL students'



understanding of text structure resulted in statistically significant increases in reading comprehension. The students had diverse L1 backgrounds and low English proficiency. Tang used expository texts because this type of text poses a challenge to students since it is “often crowded with difficult vocabulary, complex concepts and principles, unfamiliar typographical features, peculiar organizational structures, and numerous tables and figures” (Griffin & Tulbert, 1995, p. 73). The study was designed as quasi-experimental with a pretest, posttest, and nonequivalent control group. The graphic organizer intervention group received instruction on using graphic organizers that depicted the semantic relations of the text passages. The author found that the difference in mean score on the posttest for the graphic organizer group and the control group was statistically significant, with the intervention group showing significant increases in the amount of textual information recalled during testing. Tang proposed that the use of graphic organizers “facilitates the acquisition of a second language for academic purposes” (p. 189). This study helps to provide evidence for the use of graphic organizers with ELLs, yet further research is needed to examine the effects of graphic organizers on diverse contexts and learner profiles.

Jiang and Grabe (2007), in a review of graphic organizer research, proposed that the type of graphic organizer used in an intervention impacts its effectiveness for improving students’ reading comprehension. This proposal was prompted by previous research on graphic organizers, such as the synthesis of research conducted by Griffin and Tulbert (1995) which found that the research studies on graphic organizers spanning 20 years have resulted in inconclusive and contradictory findings. The review of research by Jiang and Grabe included 14 studies, of which one study included students with LD and one study included ESL students. According to Jiang and Grabe, graphic organizers “that do not represent the discourse structures of the text may be less effective than the ones that represent the discourse structure” (p. 37). In addition, the authors concluded that graphic organizers are more effective when (a) students are involved in the construction of the graphic organizer, (b) they are used as a post-reading activity, as opposed to a pre-reading activity, (c) instruction on graphic organizers is combined with instruction on summarization, and (d) the intervention period is extended for a longer time frame, such as more than a few weeks. Jiang and Grabe also stated that “a serious remaining concern is the lack of GO research with L2 students” (p. 46). Further research is necessary to build on the vast amount of research into graphic organizers with L1 students. This will allow researchers to determine

how graphic organizers can be best used as a reading comprehension intervention with ELLs and, in addition, ELLs with LD as there is a dearth of research with this population. In order to address this issue with the lack of research on graphic organizers with ELLs with LD, the following case study was conducted with a student in this population.

## METHOD

This study was aimed to investigate the following research questions: (a) What is the effect of using graphic organizers on the reading comprehension of an ELL with LD in a Honolulu middle school as shown through the participant's recall and application of relational knowledge from social studies content material; (b) Does the student see herself any differently as a reader in English because of the use of graphic organizers; and (c) What are the classroom teacher's perceptions of the effect and implementation of graphic organizers with her student who is an ELL with LD? This study was an adaptation of the research done by DiCecco and Gleason (2002) whose participants were students with LD. The original intention was to include up to ten ELLs with LD in the case study, however, due to schedule limitations of the ELLs with LD at the participating middle school, only one ELL with LD was able to participate. This study seeks to extend the research base on graphic organizers by examining their effect on the reading comprehension of an ELL with LD.

### *Participants and Setting*

The participant was a female public middle school student eligible for special education services under the category of Specific Learning Disability who is an English language learner. In order to maintain a small group instructional setting, two male public middle school students who are English language learners without disabilities were also included in the study. All three participants were in the 6<sup>th</sup> grade at the time of the study and classified as Limited English Proficient by the Hawaii Department of Education. In addition, all three students were Filipino. The female ELL with LD student, Suzie<sup>1</sup>, was 11 years old and her first language was Tagalog. One male ELL participant, Mark<sup>1</sup>, was 12 years old and his first language was Ilocano. The other

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<sup>1</sup> Pseudonyms are used to protect participant anonymity.

male ELL participant, Chris<sup>1</sup>, was 12 years old and his first language was Tagalog. To be an ELL with LD included in the study, the participant had to meet the following criteria:

1. Is classified as an English language learner by the State of Hawaii Department of Education (DOE).
2. Has been identified by the State of Hawaii DOE as having a specific learning disability.
3. Is receiving special education services at time of the study.
4. Has an active Individualized Education Program (IEP) in reading.
5. Written parental consent and student assent was obtained for participation in the study.

The two male participants had to meet criteria one and five from the above list to participate in the study. The site of the study was a public middle school in an urban area in Honolulu, Hawaii. The school was a Title I school with 68% of students qualifying for free or reduced-price lunch (NCES, 2010b). The student population of the school was 92% Asian or Pacific Islander (NCES, 2010b).

Participation was voluntary and the participating classroom teacher was also provided informed consent in writing. Parent consent forms included a request for permission to access the students' confidential records to collect demographic and English language proficiency data. Student participants were provided with written assent forms. Research approval was obtained from the University of Hawaii at Mānoa's Committee on Human Studies to ensure the protection of human subjects. In addition, approval was obtained from the Hawaii DOE's Systems Accountability Office to conduct this research in Hawaii public schools.

Prior to the intervention, I administered the following assessments to determine the students' current reading and writing level: (a) the Word Identification subtest and the Word Attack subtest of the Woodcock Reading Mastery Test-Revised, Form H (Woodcock, 1997) and (b) a writing sample. As the Woodcock Reading Mastery Test-Revised is normed for native English speakers, standard scores were used for data analyses to minimize test bias (De Rose, 1999; Geva, 2000; Wade-Wooley, 1999). Both the Word Attack and Word Identification subtests of the Woodcock Reading Mastery Test-Revised, Form H assess word reading skill level. The three participants had similar scores on the Word Attack subtest (see Table 1 below) which "measures the subject's ability to apply phonic and structural analysis skills in order to pronounce words with which he or she may be unfamiliar" and "requires the subject to read either nonsense words (letters that are not actual words) or words with a very low frequency of occurrence in the

English language” (Woodcock, 1997, p. 6). Suzie’s score of 75 on the Word Identification subtest was noticeably lower than Mark’s and Chris’ scores of 95 and 92, respectively (see Table 1 below). The Word Identification subtest “requires the subject to identify isolated words...the term *identification* implies that the subject may respond correctly to a stimulus word even though he or she has had no previous personal experience with the word” (Woodcock, 1997, p. 6). The words on the Word Identification subtest progress from high frequency to low frequency words.

Table 1

*Woodcock Reading Mastery Scores*

Woodcock Reading Mastery		
	Word Identification	Word Attack
Suzie	75	35
Mark	95	39
Chris	92	36

The writing sample was used to evaluate “the participants’ general writing ability and specific relational knowledge” (DiCecco & Gleason, p. 309). These writing samples were evaluated based on the number of words written and the number of relational statements included (see Appendix A). Suzie’s writing sample contained three relational knowledge statements and 82 words. Mark’s writing sample contained two relational knowledge statements and 23 words. Chris’s writing sample contained three relational knowledge statements and 47 words. All three of the students demonstrated the ability to understand the writing sample prompt and respond in writing.

In addition, prior to the intervention the participating classroom teacher administered a content knowledge 20-item multiple-choice pretest. This pretest covered content from the social studies textbook chapter to be used in the intervention, which was the participants’ normal social studies curriculum textbook. The content of the intervention was derived from chapter five, “Ancient Egypt” from the textbook, “World Cultures Past and Present: Level F” (Taylor & Donahue, 1997). The criteria for exclusion from the study included a participant having 13 or

more correct answers on the content pretest. The student's scores were as follows: Suzie scored 8 correct, Mark scored 11 correct, and Chris scored 9 correct. None of the three students scored 13 or higher on the pretest, therefore none met this exclusion criterion.

One teacher, then teaching the target population, delivered the prescribed instruction for this study. The classroom teacher has a Master of Education in Elementary Education and teacher licensure in the state of Hawaii for Elementary Education (K-6). At the time of the study, she had three and a half years of teaching experience, which she had spent working in an English as a Second Language classroom for Limited English Proficient students. The participating teacher provided direct instruction to her students throughout the intervention. The classroom teacher received 2.5 hours of training on the following procedures using didactic instruction and modeling: (a) the use of scripted lessons that I provided for each graphic organizer used during the intervention, (b) direct teaching of vocabulary, (c) strategy instruction for writing summaries, (d) scaffolding instruction on reading texts and answering comprehension questions, and (e) the use of graphic organizers. This training occurred prior to the intervention period. As an adaptation to DiCecco and Gleason (2002) in order to adapt instruction for ELLs, the teacher received additional instruction on providing corrective feedback during oral reading segments of each lesson. The teacher was instructed to only correct student pronunciation that was a clear decoding error or incomprehensible to allow for L1 influence on pronunciation.

### ***Materials***

The content material used in the study was the normal social studies curriculum materials used with the middle school participants. This curriculum was derived from the text *World Cultures Past and Present: Level F* by Taylor and Donahue (1997). Three weeks of content material, which had not been used in prior instruction with the students, was selected and divided into logical segments. A logical segment, also referred to as a unit of thought, is a section of the text whose content is focused on a “single theme, concept, or focal idea (Tindal & Marston, 1990)” (DiCecco & Gleason, 2002, p. 310). Chapter five, “Ancient Egypt,” of the social studies textbook was divided into five logical segments (Taylor & Donahue, 1997).

One graphic organizer was used per logical segment of the content material, for a total of five graphic organizers. Each graphic organizer had a teacher version and a student version. Every individual lesson was designed to cover only the content contained in a single unit of thought.

This content included “facts, concepts, and relationships” (DiCecco & Gleason, 2002, p. 310). Implicit and explicit relational knowledge statements were identified in each unit of thought. Relational knowledge is the knowledge of relationships between key concepts within the content being learned, which in the case of this study is the social studies text (DiCecco & Gleason, 2002). These relational knowledge statements were incorporated into the graphic organizers and teacher scripts. An example of a relational knowledge statement is, “Egyptians believed that people would live again after death because they believed that people were like sun.” Students received a handout titled, “Steps for Writing a Summary,” which was used during various lessons throughout the intervention.

**Graphic organizers.** I developed all of the graphic organizers and designed them “to make implied relationships more explicit and to cue relational knowledge” (DiCecco & Gleason, 2002, p. 311). Each graphic organizer had two versions: (a) a teacher version and (b) a student version (see Appendix B). The student versions had blank and partially blank cells so that the students had to fill in the missing information on their graphic organizer during the graphic organizer instructional segment, when directed to by the teacher. Varying formats were used for the graphic organizers; however, each had “no more than 16 cells” (DiCecco & Gleason, 2002, p. 311). The format of the cells was designed to visually show how concepts are related to one another. The cells were geometric shapes. Larger cells were used for main ideas, while supporting ideas were in smaller cells. The relationships between the ideas contained in the cells were indicated by lines and arrows which connect the cells.

**Instructional scripts.** In order to ensure that students received direct instruction on relational knowledge during each of the lessons that introduced a new graphic organizer, scripts were provided to the teacher for each of the five lessons that covered a new graphic organizer (see Appendix C). The scripts included instruction on relational knowledge through explicit statements. The language in the scripts directed the participants’ attention to specific features of the graphic organizers, including specific cells and the significance of the connections between the cells.

### ***Instructional Procedures***

The intervention period consisted of twelve 40-minute lessons carried out over a three-week period during regularly scheduled social studies instructional blocks in a school classroom

familiar to the participants. Originally the intervention was designed to be conducted in 20 lessons over a four-week period, however, the participating school's schedule only included social studies instruction four days per week and the participating teacher was hesitant to participate in an intervention period longer than three weeks. Participants received direct instruction on the relational knowledge and content of each unit of thought.

**Summary writing.** In the DiCecco and Gleason (2002) study, the use of the writing sample was jeopardized as a dependent measure due to very short student responses. This led the researchers to include summary writing instruction in their intervention. I followed the researchers' adapted method and all participants received 20 minutes of instruction on summary writing from lesson two through lesson seven. The summary writing strategy used was adapted by DiCecco and Gleason (2002) "from Sheinker and Sheinker (1989):

1. list the key points,
2. combine the points that go together,
3. number the points into a logical order,
4. reread the list in order, and
5. write the numbered points into paragraphs" (p. 311).

This strategy was taught through "a model, prompt, and check lesson design" (DiCecco & Gleason, 2002, p. 311). During lessons eight through 12, the students were reminded of the summary writing strategy when each summary writing activity was carried out. Students were prompted to use their summary writing handout, "Steps for Writing a Summary." A summary writing activity took place after the oral reading of each unit of thought.

**Instructional lessons.** The method of instruction was "intensive instruction" which has been defined by Torgesen (1998) as follows:

1. the majority of teaching is done through direct instruction,
2. more time is devoted to the teaching of each content item
3. there is a low teacher to student ratio, and
4. students are given a sufficient amount of practice with everything that is taught.

The lessons focused on "(a) the direct teaching of vocabulary meaning and difficult-to-decode words, (b) strategy instruction for writing summaries, and (c) carefully structured scaffolding for reading text and answering comprehension questions" (DiCecco & Gleason, 2002, p. 312).

***Time format of lessons.*** Lessons included the following activities; however, each lesson did not include all of the activities that follow, as the total time for each lesson was 40 minutes:

- 5 to 10 minutes: Pre-reading vocabulary instruction of vocabulary items that appeared in the reading passage for the lesson.
- 12 to 15 minutes: When a new chapter was introduced (one lesson), a chapter previewing strategy developed by Archer and Gleason (as cited in DiCecco & Gleason, 2002) was used. The teacher had the students read: (a) the chapter title, (b) the introduction, (c) the headings and subheadings, (d) the chapter summary, and (e) the end of chapter questions.
- 10 minutes: Students orally read the lesson’s text passage in their small group by taking turns reading. During this oral reading activity, the teacher provided corrective feedback for decoding errors by stating the correct pronunciation and having the student repeat the word. This activity was modified from DiCecco and Gleason (2002) in order for teacher feedback to accommodate L1 influence on the pronunciation of the ELLs by only applying to decoding errors resulting in incomprehensible pronunciation. In addition, scripted literal and inferential comprehension questions were asked to the student group during oral reading. If a correct response was not given, the teacher directed the students to reread the relevant portion of the reading passage and the question was repeated. If students were still unable to answer a question, the teacher provided the answer and an explanation.
- 20 minutes: Direct instruction on relational knowledge in the reading passage. Instruction was aimed at “making relationships that are implied in the passages more explicit” (DiCecco & Gleason, 2002, p. 312). Graphic organizers were introduced to show relationships visually in addition to verbal instruction. All graphic organizers were introduced as a post-reading activity following the reading of each unit of thought. Each graphic organizer was specific to the relational knowledge found in the unit of thought for that lesson. An Elmo projector was used to display the graphic organizer while the teacher verbally explained the relationships depicted in the graphic organizer. The teacher pointed to specific cells and connections in the projected image of the graphic organizer while providing verbal instruction. The teacher modeled using the graphic organizer and guided students in using it by uncovering the information in each cell. The teacher elicited responses from individual participants or the group in unison. Using partially completed graphic organizers, the teacher prompted students to fill in specific cells on their graphic organizer handout. After all of the cells had been presented, the teacher reviewed the



complete graphic organizer. Each graphic organizer was reviewed in subsequent lessons to facilitate retention (DiCecco & Gleason, 2002, p. 312).

### ***Observations***

I observed three lessons per week throughout the intervention. The observations were done to (a) determine if the lessons were being taught according to the lesson plans I provided to the teacher and (b) to observe the participants' behavior during the lessons. Field notes were taken during each observation.

### ***Intervention Effect Instruments***

Three measures were used to assess student learning of content knowledge and relational knowledge statements: (a) a 20-item content knowledge multiple-choice pretest and posttest derived from the classroom social studies curriculum (alternate forms of the instrument were used as pretest and posttest) (see Appendix D), (b) five five-item content knowledge fact quizzes (see Appendix E), and (c) two relational knowledge essays. The three assessment measures were conducted by the classroom teacher.

***The 20-item multiple-choice tests.*** Test items were based on the content of the social studies material used for the intervention period and the answers required “students to reiterate, apply, or predict specific information” (DiCecco & Gleason, 2002, p. 313). The students had 20 minutes to complete each of the tests. Instructions were read aloud to the students twice and any student clarification questions about the instructions were answered before the test began.

***The five-item content knowledge fact quizzes.*** The social studies content for the intervention period was divided into five sections and a quiz was created based on the content facts in each section. Quiz questions were selected by randomly selecting facts from a list of facts contained in each section. Each quiz was administered the day after the relevant section of the content material had been read by the students.

***The relational knowledge essays.*** Two different essay prompts were used: (a) one administered after lesson seven and (b) one administered after lesson 12. The essay prompts related to the content covered in the lessons prior to the test administration and required students to write an explanatory response. The students had 20 minutes to complete each of the essays. The students were given five minutes for review of the graphic organizer which corresponded to

the content related to the essay prompt. Instructions were read aloud to the students twice and any student clarification questions about the instructions were answered before the test began. Students had their “Steps for Writing a Summary” handout to use while writing their essay responses. The teacher collected the student essays and immediately checked them for legibility. Any illegible responses were clarified with the student. The student essays were given to me for scoring and the students did not receive feedback on their essays.

### ***Social Validity***

In order to assess students’ and teacher’s perceptions of the intervention and its effectiveness, questionnaires and interviews were conducted.

***Questionnaires.*** Two written questionnaires were used at the end of the study: (a) one questionnaire for the student participants and (b) one questionnaire for the participating teacher.

***Student questionnaire.*** The student questionnaire (see Appendix F) was used to determine the students’ attitudes towards using the graphic organizers. The questionnaire consisted of two three-point Likert-scale questions which were: (1) “Do you think that the graphic organizers helped you to be a better reader?” and (2) “Do you like using graphic organizers?” I read the student questionnaire aloud to the students in a group. Students were encouraged to ask any questions they had about the questionnaire. Then, the students were instructed to circle their response to each question.

***Teacher questionnaire.*** The teacher questionnaire (see Appendix G) was used to elicit the teacher’s perspectives on the usefulness of the intervention strategies, their ease of implementation, and concerns and/or suggestions for providing instruction to ELLs with LD. I gave the classroom teacher the questionnaire to complete. The questionnaire consisted of five five-point Likert questions and three open-ended questions. The Likert-scale questions elicited the teacher’s perceptions of: (a) the effectiveness of the intervention, (b) the likelihood of her using the strategies in her classroom in the future, (c) whether the graphic organizers increased her students’ reading comprehension, and (4) the ease of implementation of the intervention. The open-ended questions addressed: (a) changes and/or suggestions for the intervention and strategies, (b) additional teacher concerns about the academic progress of her students who are ELLs with LD, and (c) additional suggestions for the instruction of ELLs with LD.

**Interviews.** To further explore the students' experiences and perspectives about this intervention, I interviewed the participants once per week throughout the intervention period. The student interview questions (see Appendix H) were designed to elicit students' perceptions of: (a) the intervention strategies, (b) their understanding of the content material, and (c) their self-efficacy.

### **Scoring of Measures**

**Objective measures.** The content knowledge multiple-choice pretest and posttest were both scored by two independent raters. Items that were answered correctly received one point and items that were incorrect received no points. The two independent raters scored both measures for the three participants the same.

The content knowledge multiple-choice fact quizzes were scored by the teacher directly following their administration. I provided the teacher with an answer key for each quiz. Items that were answered correctly received one point and items that were incorrect received no points. I rescored all of the quizzes and there were no discrepancies in scoring between the teacher's scoring and my scoring.

**Written measures.** The scoring procedures for the writing sample, essay one, and essay two included (a) a word count and (b) a count of the number of relational knowledge statements. Each of the writing samples and essays was retyped and the word count feature in Microsoft Word was used to tally the number of words written. Determining the number of relational knowledge statements was a multiple step process. First, I read all of the students' writing samples and essays to identify all relevant relational knowledge statements. Relevant relational knowledge statements were "identified by examining their alignment with explicit or implied principles present in the text" and demonstrated that the student had "an understanding of the relationships between concepts" (DiCecco & Gleason, 2002, p. 314).

Student written measures were also examined to determine if the statements that were not identified as relevant relational knowledge statements were factual statements or erroneous/irrelevant relational knowledge statements. Next, I examined the relevant sections of the chapter, the graphic organizers, and the graphic organizer scripts to determine where the students had encountered the relational knowledge statements found in their written measures. The final step was to train the independent rater on the scoring procedures of the identification of relevant

relational knowledge statements, factual statements, and erroneous/ irrelevant relational knowledge statements. The interrater reliability was 100%. This was calculated by adding up the number of items that were scored the same divided by the total number of possible items.

## RESULTS

### *Objective Measures*

***The 20-item content knowledge multiple-choice tests.*** All three of the students showed improvement in their content knowledge from the pretest to the posttest (see Table 2 below). Suzie scored 40% on her pretest and 75% on the posttest for an improvement of 35%. Mark scored 55% on his pretest and 85% on his posttest for an improvement of 30%. Chris scored 45% on his pretest and 70% on his posttest for an improvement of 25%.

Table 2

*Content Knowledge Pretest and Posttest Scores*

	Suzie	Mark	Chris
Pretest (Possible 0-20)	8	11	9
Post-test (Possible 0-20)	15	17	14
Percent Improvement	35%	30%	25%

***The five-item content knowledge fact quizzes.*** The participants' scores on the five content knowledge fact quizzes are shown in Table 3. Suzie demonstrated an average score across the five quizzes of 72%. Mark had a mean quiz score of 84% and Chris had a mean quiz score of 76%.

Table 3

*Content Knowledge Fact Quiz Scores*

	Suzie	Mark	Chris
Quiz 1 (Possible 0-5)	5	5	5
Quiz 2 (Possible 0-5)	1	5	2
Quiz 3 (Possible 0-5)	3	3	4
Quiz 4 (Possible 0-5)	5	5	4
Quiz 5 (Possible 0-5)	4	3	4
Mean Score Percentage	72%	84%	76%

**Written measures.** The participants wrote essay responses to essay prompts that were written to elicit students' relational knowledge after lesson seven and lesson 12 (see Appendix I for the students' written measures and the essay prompts). All three participants showed an increase in the number of relational knowledge statements written by lesson 12 (see Table 4).

Table 4

*Number of Relational Knowledge Statements in the Written Measures*

	Suzie	Mark	Chris
Writing Sample	3	2	3
Essay 1	3	3	0
Essay 2	5	6	6

For each relevant relational knowledge statement that was included in a student essay, the statement had been encountered in the text, the graphic organizer, and the teacher script. This

was true for the relevant relational knowledge statements found in both essay one and essay two for all participants. Suzie answered the essay prompt for essay one partially correct. She recalled some of the relevant relational knowledge statements; however, she included one erroneous relational knowledge statement. Mark answered the essay one prompt correctly with all of the relevant relational knowledge statements included. Mark also included one factual statement in his essay one. Chris failed to answer the essay one prompt correctly; his one sentence response included two erroneous relational knowledge statements. For essay two, all three participants answered the essay prompt correctly and their essays included only relevant relational knowledge statements. The word counts for the student essays varied; the number of words written from the writing sample to essay two decreased for Suzie and Chris, while it increased for Mark (see Table 5).

Table 5

*The Total Number of Words Written in the Written Measures*

	Suzie	Mark	Chris
Writing Sample	82	23	47
Essay 1	41	39	26
Essay 2	27	47	24

**Observations**

During each of the nine observations, the classroom teacher followed the lesson plans that I provided to her. No deviations from the lesson plans were observed. During the initial four observations, Suzie demonstrated off-task behavior, shyness, and an unwillingness to participate without the teacher encouraging her and urging her to participate. Suzie was hesitant to read aloud in the group and, during lesson two, actually refused to read aloud during the oral reading activity. By lesson seven, Suzie was notably more comfortable in class and did not hesitate to read aloud or answer comprehension questions. She often raised her hands to offer up responses to the teacher's questions.

The teacher, without being prompted to do so, asked the students informally at the end of lesson three whether they preferred the graphic organizer or writing a summary. Suzie and Mark both stated that they preferred the graphic organizer. Chris stated that he preferred summary writing. The teacher asked the students the same question at the end of lesson eleven and all three participants stated that they preferred summary writing over graphic organizers. In the beginning of lesson nine, Suzie eagerly asked the teacher, “Can we do a summary?”

During the summary writing portions of the lesson, Suzie took a few minutes longer to write her summaries than the male participants. It was also observed during the content knowledge multiple-choice posttest that both Mark and Chris self-checked each item on their finished test prior to turning it in to the teacher, while Suzie did not self-check her test.

### ***Social Validity***

***Questionnaires.*** The questionnaire data was collected at the end of the intervention period. The students reported neutral to positive perceptions of using graphic organizers. The teacher reported positive perceptions of graphic organizers and the intervention as a whole.

***Student questionnaire.*** The student responses to the first questionnaire item, “Do you think that the graphic organizers helped you to be a better reader?”, were: two students selected “Yes” and one student selected “Maybe.” For the second questionnaire item, “Do you like using graphic organizers?”, the student responses were: two students selected “Yes” and one student selected “It’s OK.”

***Teacher questionnaire.*** The classroom teacher responded extremely positively in regards to the effectiveness and ease of implementation of the intervention, shown through her selection of “Strongly agree” for all five of the Likert-scale items. These five Likert-scale items were: (a) “I found this intervention to be effective with my students,” (b) “I will use these strategies in my regular curriculum,” (c) “The graphic organizers facilitated the reading comprehension of my students who are English language learners,” (d) “The graphic organizers facilitated the reading comprehension of my student who is an English language learner with learning disabilities,” and (e) “This intervention was easy to implement.”

In response to the first open-ended question, “Do you have any changes or suggestions that you would like to make for the instructional strategies and/or materials used in the intervention? Please list them.” The classroom teacher commented on the summary writing activity. Her

response was, “For the summaries, it was better to have the students write with me as I modeled the way to write a summary.” This response was a reaction to the first summary writing activity that took place during Lesson two. The first summary writing activity was designed according to direct instruction protocol in which teachers should model an activity prior to having the students take part in the activity using prompts (Magliaro, Lockee, & Burton, 2005). The lesson was written so that the classroom teacher would model the entire five step process for writing a summary and then after the whole process was modeled, the teacher would guide the students through the steps to write their own summary. This modeling of the summary writing alone took 20 minutes, which only left five minutes of class for the students to work on writing their own summaries and consequently the activity was carried over into lesson three. The teacher expressed her feelings after class that day that it would have saved time to have the students work along with her through the modeling of the steps.

The second open-ended question, “Do you have any other areas of concern regarding the academic progress of your students who are English language learners with learning disabilities? Please list them.” elicited a straightforward response of “Nope” from the teacher. The teacher gave a positive comment about the intervention in response to the final open-ended question, “Do you have any other suggestions for teaching English language learners with learning disabilities? Please list them.” Her response was, “No. These lessons and graphic organizers were great for ELLs. The graphic organizers helped them understand visually.”

**Interviews.** When the participants were asked about what they thought was easy about the lesson, all of them responded that a particular content item was easy, such as the pyramids or papyrus. The one exception to this was Suzie’s response in her second interview that she thought that the summary was easy.

In response to the question about what was hard in the lesson, both Mark and Chris reported particular content items were difficult; with the exception of Mark’s second interview when he reported that nothing was hard. Both Mark and Chris reported that King Tut was hard to understand in their first interviews and in their third interviews both reported that the fall of Egypt was hard to understand. Suzie’s responses to the question about what was hard varied: In interview one, she stated that the pyramids were hard to understand; in interview two, she said reading the book was hard; and in interview three, she said that graphic organizers were hard.



When asked further about why she thought graphic organizers were hard, she stated that the word, “graphic organizer” is a hard word.

All of the participants reported that, “Yes,” they understood the reading in each of the three interviews. In response to the question that elicited their perspective on whether they thought they were a good reader, both Suzie and Chris responded “Maybe” in all three interviews. Mark, on the other hand, responded “Maybe” in interview one and two, but his response in interview three changed to “Yes, I am a good reader.”

The participants had varied responses to the question, “Do you like using graphic organizers? Why?” Both Chris and Mark responded “Yes” in all three interviews, but they had different reasons why. Chris stated that he liked graphic organizers because they help him to understand the material and what the teacher is talking about. Mark said that he liked graphic organizers because he wants to learn more about Egypt. Suzie, on the other hand, in the first interview stated that, “Yes,” she liked graphic organizers because “the picture has the answer.” However, in interview two and three she said that only sometimes did she like graphic organizers. In interview two, she said her reason for this was that sometimes they are hard and sometimes they are easy. In interview three, she said that sometimes she doesn’t like graphic organizers because she doesn’t like the pictures that are on them, “but only some” of the pictures.

## **DISCUSSION AND RECOMMENDATIONS**

Let us now return to the research questions that this study aimed to investigate. The first research question was, “what is the effect of using graphic organizers on the reading comprehension of an ELL with LD in a Honolulu middle school as shown through the participant’s recall and application of relational knowledge from social studies content material?” The results of the study indicate that graphic organizers had a positive effect on Suzie’s reading comprehension of content knowledge and relational knowledge. Her increase in content knowledge was demonstrated through her 35% increase from her pretest to posttest scores. Her increase in relational knowledge was demonstrated in her ability by lesson 12 to recall and apply to essay prompt two all of the relevant relational knowledge statements that had been included in the unit of thought corresponding to essay prompt two. The inclusion of summary writing in the intervention appears to have enhanced Suzie’s ability to demonstrate

through writing her understanding of the relational knowledge statements that had been learned. This finding corresponds with Jiang and Grabe's (2007) research synthesis finding that the effectiveness of graphic organizers are enhanced by combining instruction on graphic organizers with instruction on summarization. While limited to the specific context and participant of this case study, the results indicate that graphic organizers are an effective reading comprehension intervention for an ELL with a reading-related LD.

In examining the findings of this case study in relation to the two participants who were ELLs without disabilities, the same positive effects were found. Both Mark and Chris demonstrated improvement in reading comprehension as shown through their improvements in content knowledge through the pretest and posttest measures, 30% and 25% respectively, and in their increased relational knowledge as shown through their essays by the end of lesson 12. This indicates that, within the context of this case study, graphic organizers are an effective reading comprehension intervention for ELLs without disabilities as well.

For both essay one and essay two, all of the relevant relational knowledge statements included in the students' essays were found in the text, the teacher script, and the graphic organizer for the corresponding unit of thought. This may indicate that the inclusion of explicit instruction by the teacher on the relational knowledge found in the text and graphic organizer is an important component of instruction to facilitate students' comprehension of relational knowledge within the text. In addition, in the students' posttest results, there was one question, question number 15, that all three participants answered incorrectly. The question required students to choose what "Egyptian tombs were filled with." The correct answer, "things that the person needed in their next life," was explicitly stated in the text and the teacher script; however, the graphic organizer did not include this statement. The graphic organizer stated "Tombs filled with objects and paintings," so the statement of why Egyptians placed objects in tombs was not represented visually in the graphic organizer. This may indicate that students are better able to recall information that has been included visually in a graphic organizer.

In the DiCecco and Gleason (2002) study, the authors had examined the number of words written because they expected students should write more words in their essays by the end of the intervention. However, within the students' written measures of the current case study, the findings show that the number of words written varied across students, as Suzie and Chris both wrote fewer words by the end of the intervention and Mark wrote more words. While the number

of words written varied, each of the students showed marked improvement in their essays and the recall of relational knowledge by essay two. This indicates that the number of words written was not a measure that related to students increased reading comprehension or their summary writing ability.

The second research question that this study aimed to investigate was, “does the ELL with LD student see herself any differently as a reader in English because of the use of graphic organizers?” The interviews with Suzie indicated that her self-reported perception of her reading ability did not change over the course of the intervention as she replied that “Maybe” she was a good reader in each interview. Looking at the self-perceptions of reading ability in the two ELL without disability students, Chris did not report any change in how he viewed himself as a reader. However, Mark reported in his final interview that he viewed himself as a “good reader.” This positive change could indicate that, for Mark, the use of graphic organizers did have a positive impact on how he viewed himself as a reader in English. Therefore, the results to this research question were mixed and no clear conclusion can be made.

The final research question was, “what are the classroom teacher’s perceptions of the effect and implementation of graphic organizers with her student who is an ELL with LD?” The results of the teacher questionnaire were overwhelmingly positive for the interventions effectiveness and ease of implementation. The teacher believed that the graphic organizers facilitated the reading comprehension of both her ELL with LD student and her students who are ELLs. The positive teacher perceptions are an important finding because even if instructional strategies appear to be effective, if teachers find them burdensome or difficult to implement in their classroom, they could avoid integrating them into their classroom practices. The classroom teacher did offer the suggestion that the instructional strategy of summary writing used in the intervention would be better if students wrote along with her while she modeled the way to write a summary. I agree with her suggestion that modeling each step individually, versus modeling the entire process, and then prompting the students to complete that step, would be a more efficient way to complete the activity while still providing the model, prompt, check direct instruction format.

### ***Implications***

The results of this study have several important implications. This case study adds to the literature on the effectiveness of graphic organizers with students that are ELLs with LD, as well as students who are ELLs without disabilities. Results appear to indicate that graphic organizers are an effective instructional strategy for facilitating the acquisition of English for academic purposes for both ELLs with LD and ELLs without disabilities. Graphic organizers provide students with a visual representation of the content in a text and this may facilitate the learning of both content knowledge and the English language for ELLs with LD and ELLs without disabilities. In addition, the findings of this study align with the findings of Jiang and Grabe (2007) in which they proposed that graphic organizers are more effective when (a) students are involved in the construction of the graphic organizer, (b) graphic organizers are used as a post-reading activity, and (c) graphic organizer instruction is combined with instruction on summarization.

### ***Recommendations***

The research into the effectiveness of graphic organizers as a reading comprehension intervention has been mainly focused on the population of students who are native speakers of English. There is a limited amount of research investigating their effectiveness with ELLs and a dearth of research investigating their effect on the reading comprehension of ELLs with LD. Although the results of this study add to the research literature, the generalizability is limited based on the small number of participants. Further research is needed that examines the effects of graphic organizers on the reading comprehension of ELLs and ELLs with LD in diverse contexts, with diverse students, and over an extended intervention period.

Based on the findings in this case study, graphic organizers appear to be an effective reading comprehension intervention for an ELL with LD and two ELLs in a public middle school. Continued research is warranted in investigating methods for teaching students to use graphic organizers effectively during the middle school years when reading to learn becomes a crucial step for their educational success. In addition, further research could investigate the instructional procedures on graphic organizers used in this study with elementary school students to determine if it can aid in preparing them for reading to learn.

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**APPENDIX A**

**STUDENT WRITING SAMPLES**

**Directions:** Read the question completely. Write your best answer to the question. Try to write as much as you can.

1. In ancient Egypt, people lived near the river. They also grew their food near the river. It did not rain very much in Egypt. What would happen to the people in Egypt if there was no rain and the river dried up?

**Student: Suzie**

It would happen if people in Egypt if it no rain and the river dried up because if it people who live in Egypt they would be dead because Egypt is a hot place to live there and it also would be bad if all the people and animals would be dead if it no rain and the river dried up. I would be worried if the people who live at Egypt to be dead and the king would be dead too.

Total words: 82

Relevant relational knowledge statements	“if it no rain and the river dried up...people who live in Egypt they would be dead” “it also would be bad if all the people and animals would be dead if it no rain and the river dried up.” if the people who live at Egypt to be dead and the king would be dead too”	3
Factual statements	Egypt is a hot place to live”	1
Erroneous relational knowledge statements		

**Student: Mark**

The weather its gonna be hot and the people gonna be sad because the river is dried up and there was no rain.

Total words: 23

Relevant relational knowledge statements	“the weather its gonna be hot and the people gonna be sad because the river dried up and there was no rain.”	2
Factual statements		0
Erroneous relational knowledge statements		0

**Student: Chris**

If the rain stop and the river dried up the egyptians will be thirsty and not enough water because the rain stop and the river dried up. the Egypt will be poor and the tour peoples cannot go there because they will be thirsty and feel hot.

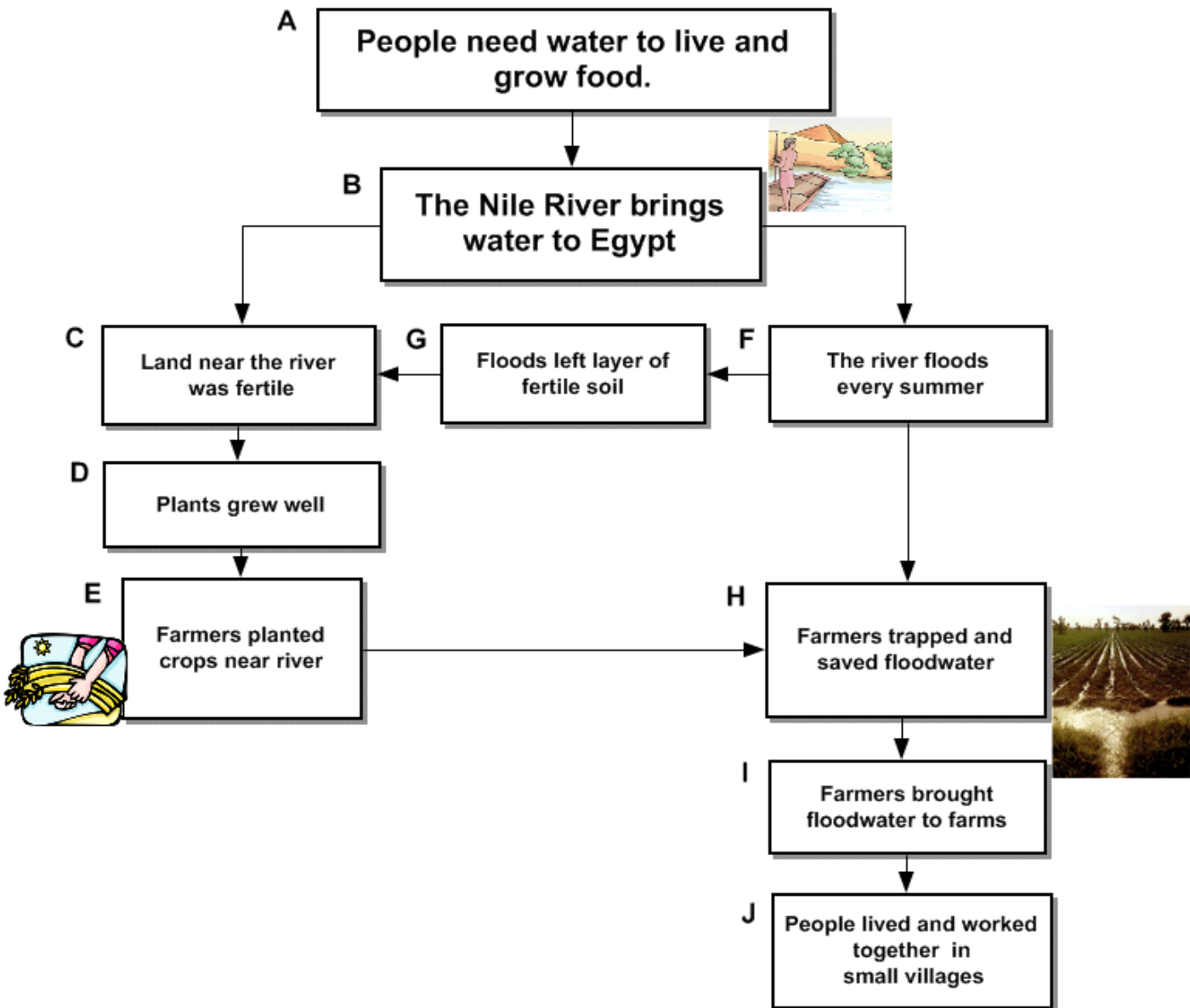
Total words: 47

Relevant relational knowledge statements	“if it rain and the river dried up the Egyptians will be thirsty and not enough water” “the Egypt will be poor	3
Factual statements		0
Erroneous relational knowledge statements	and the tour peoples cannot go there because they will be thirsty and feel hot”	1

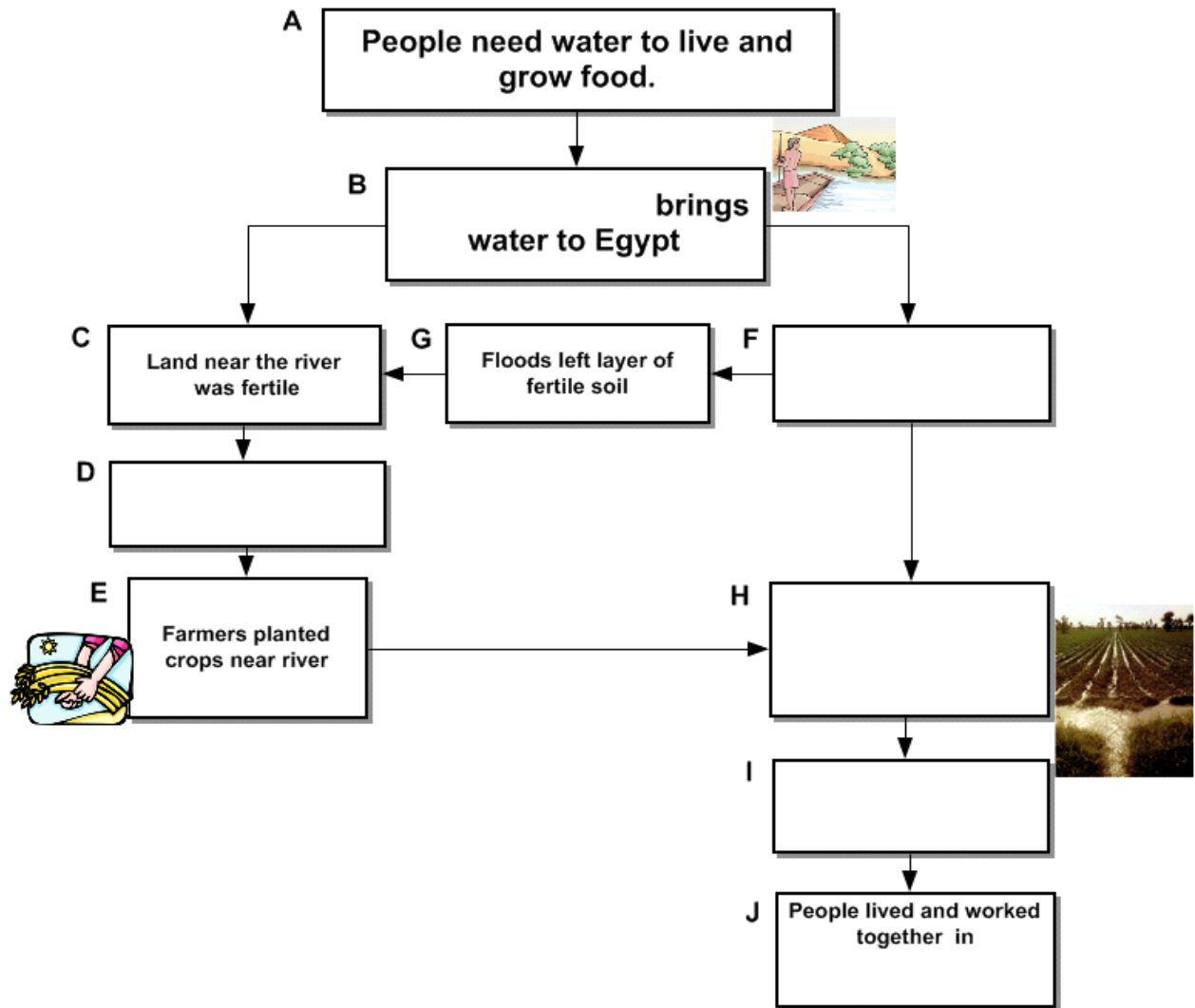
APPENDIX B

GRAPHIC ORGANIZERS

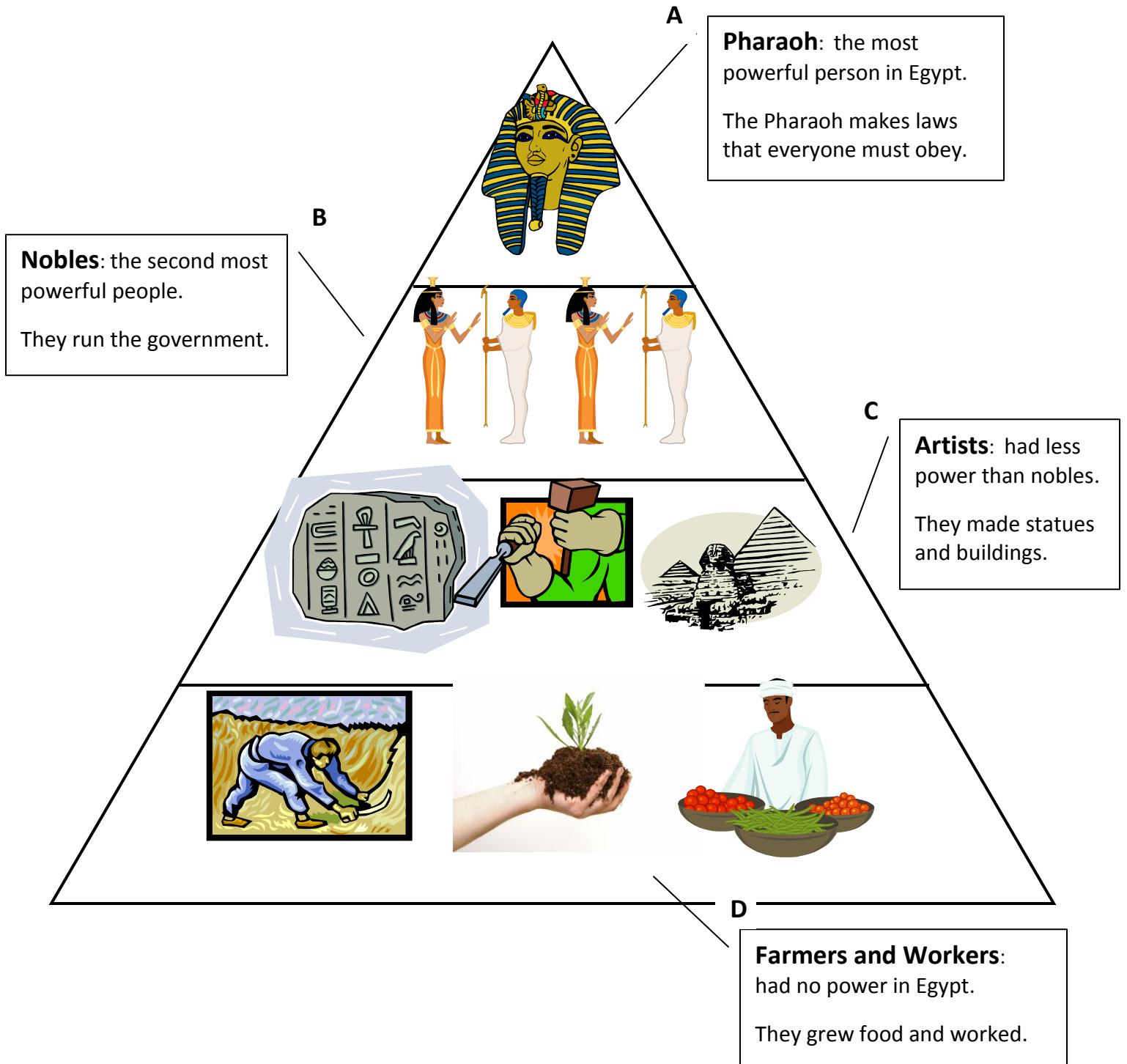
# How Farming Began in Egypt



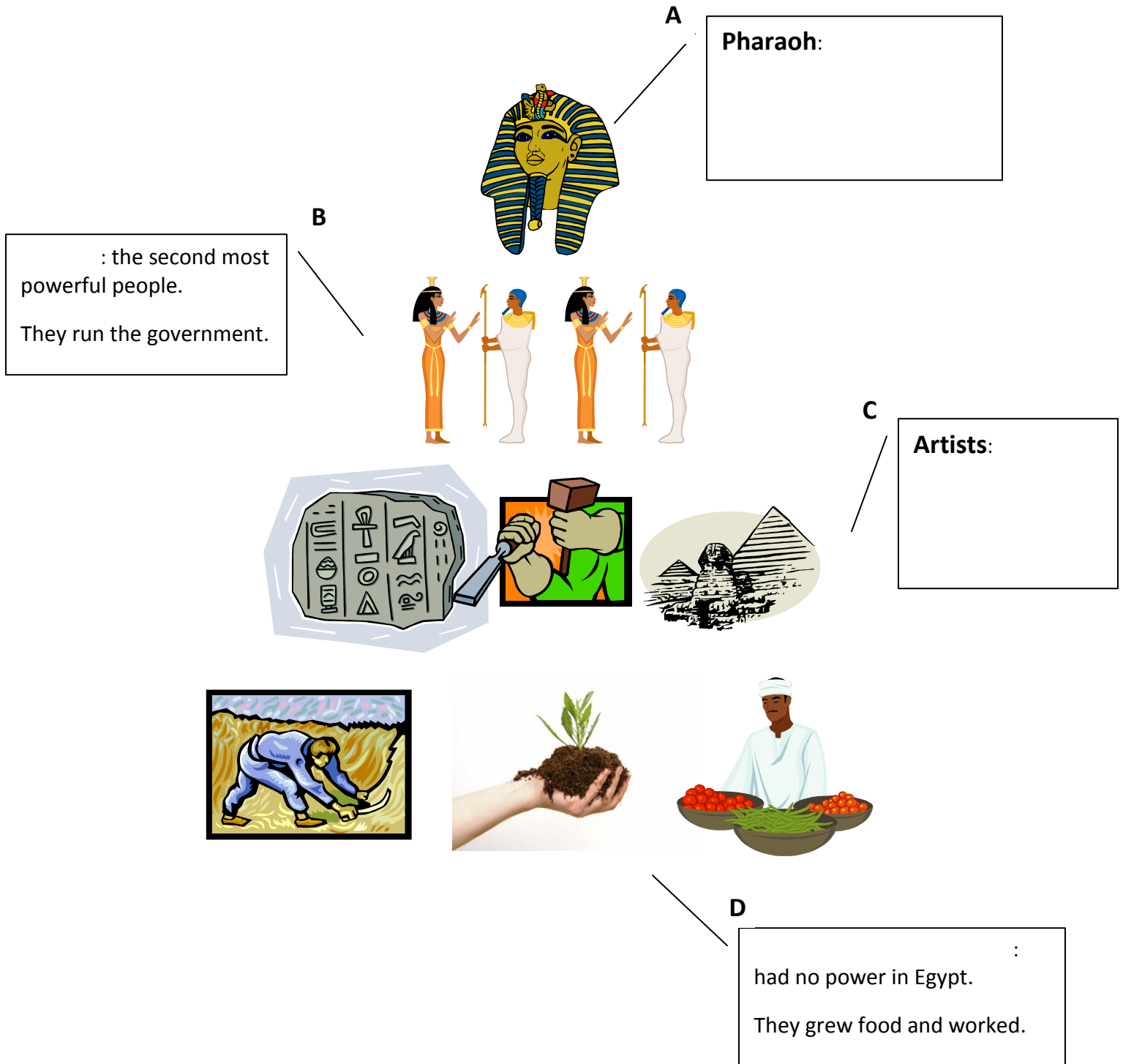
# How Farming Began in Egypt



# Government in Ancient Egypt



# Government in Ancient Egypt



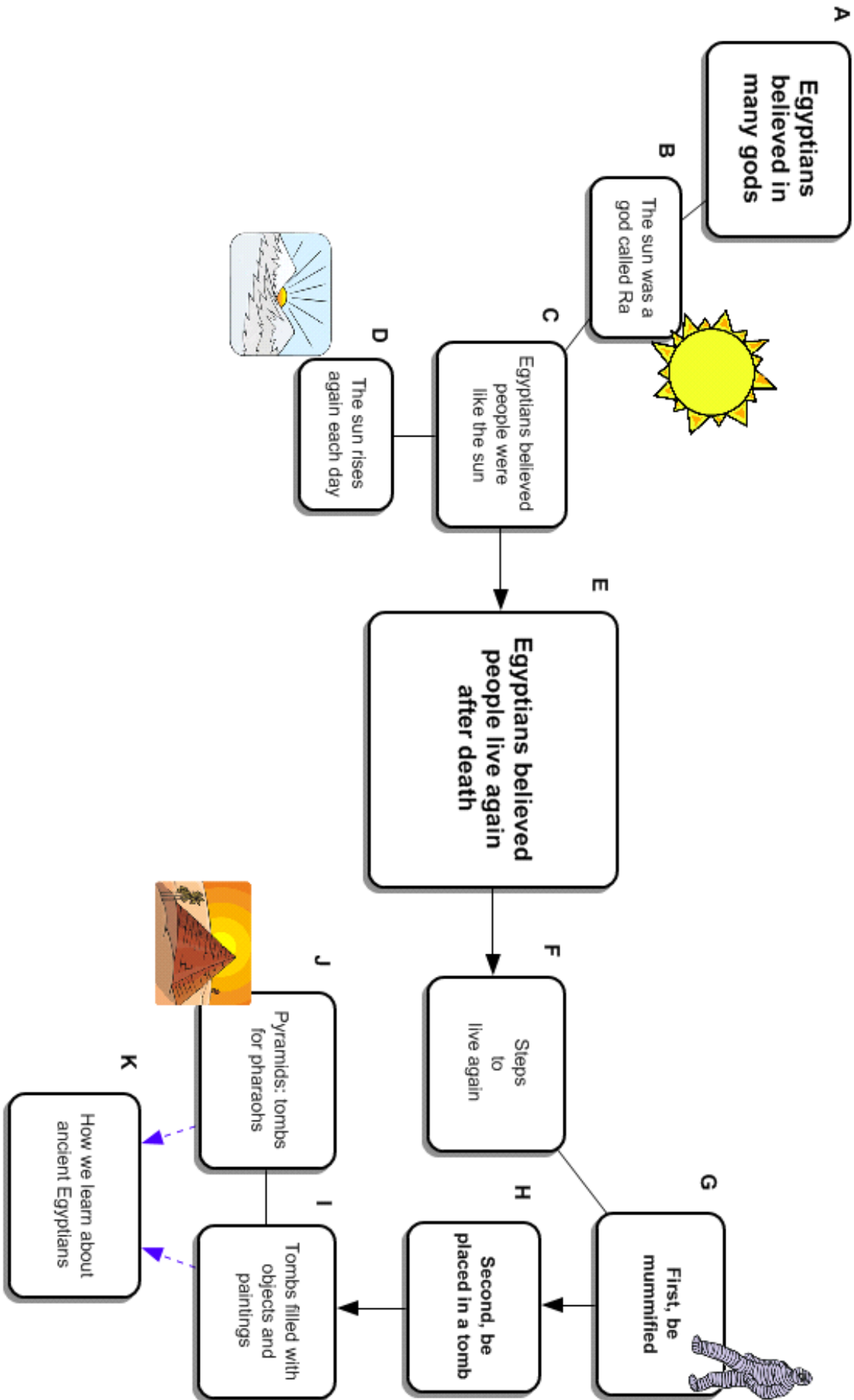
**Pharaoh:**

**B**  
: the second most powerful people.  
They run the government.

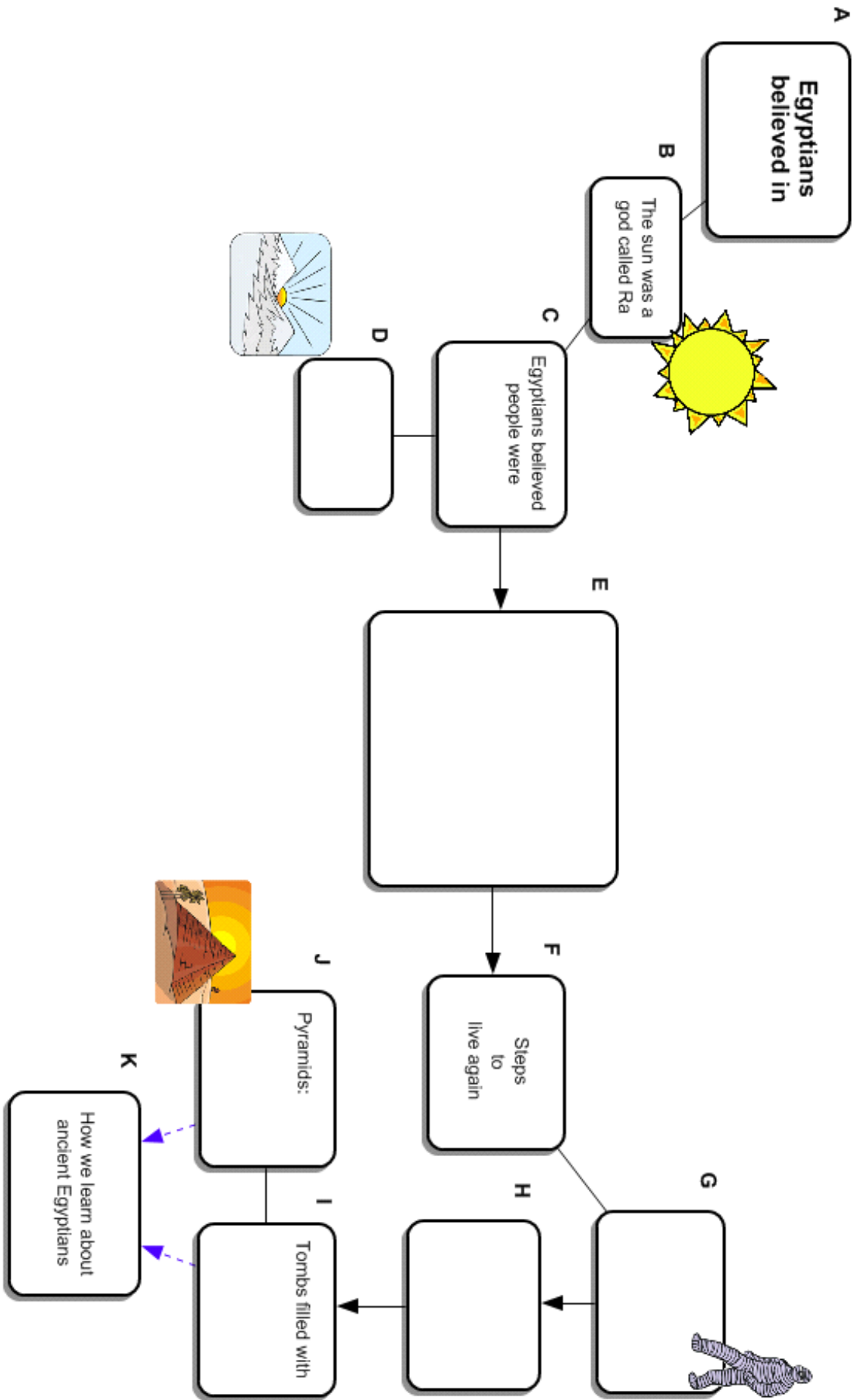
**C**  
**Artists:**

**D**  
: had no power in Egypt.  
They grew food and worked.

# Egyptian Religion and Life after Death

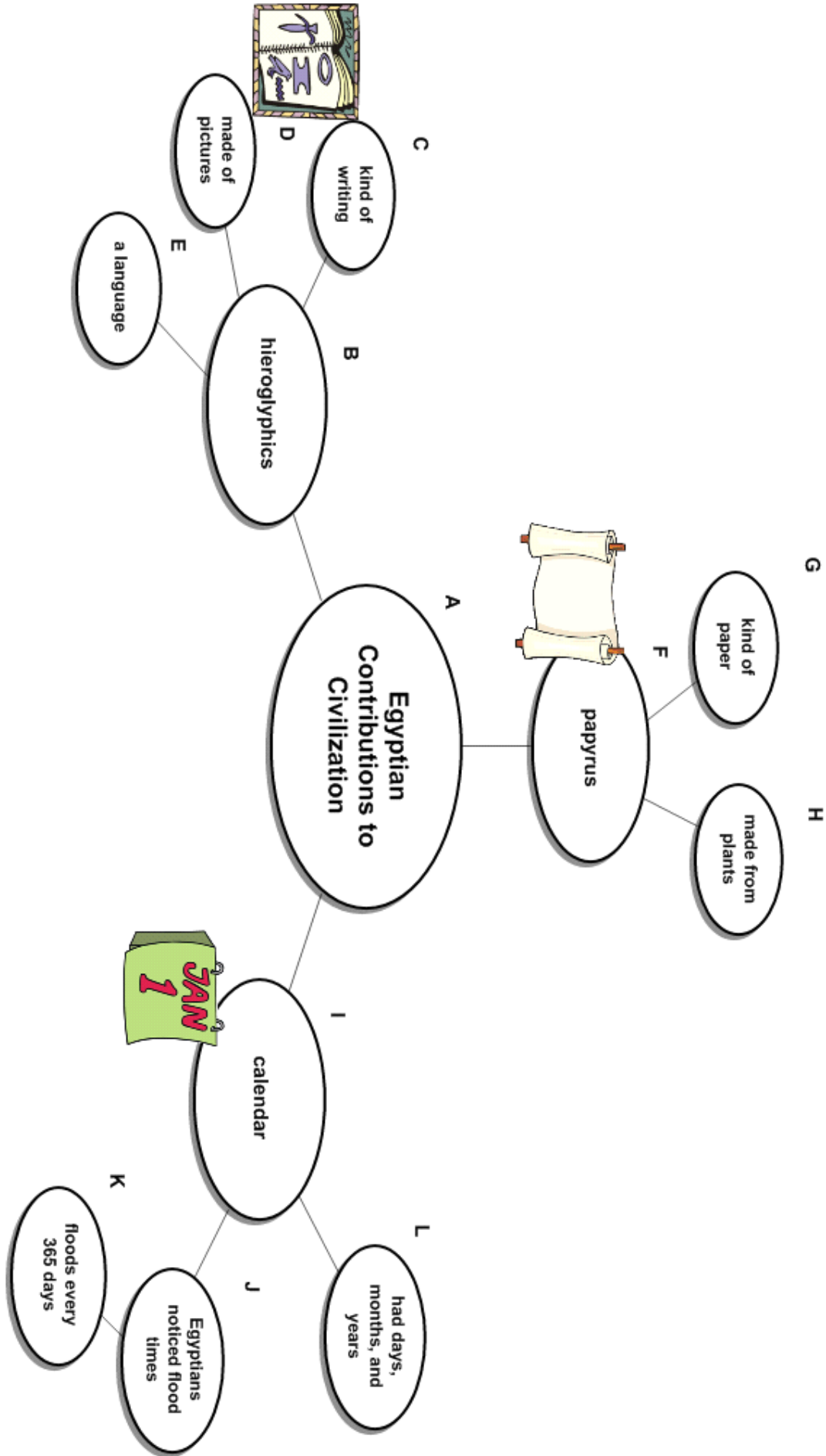


# Egyptian Religion and Life after Death

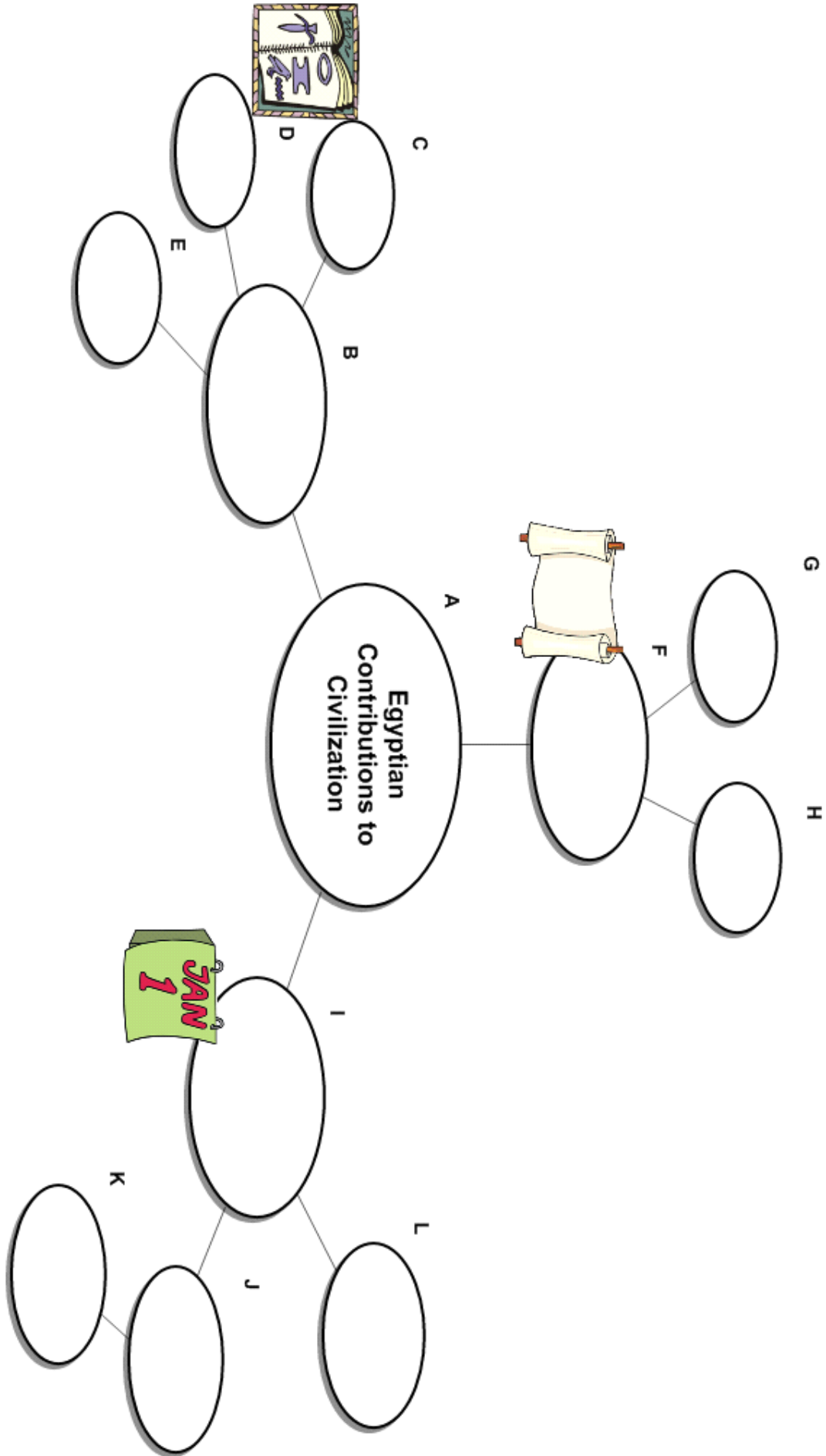




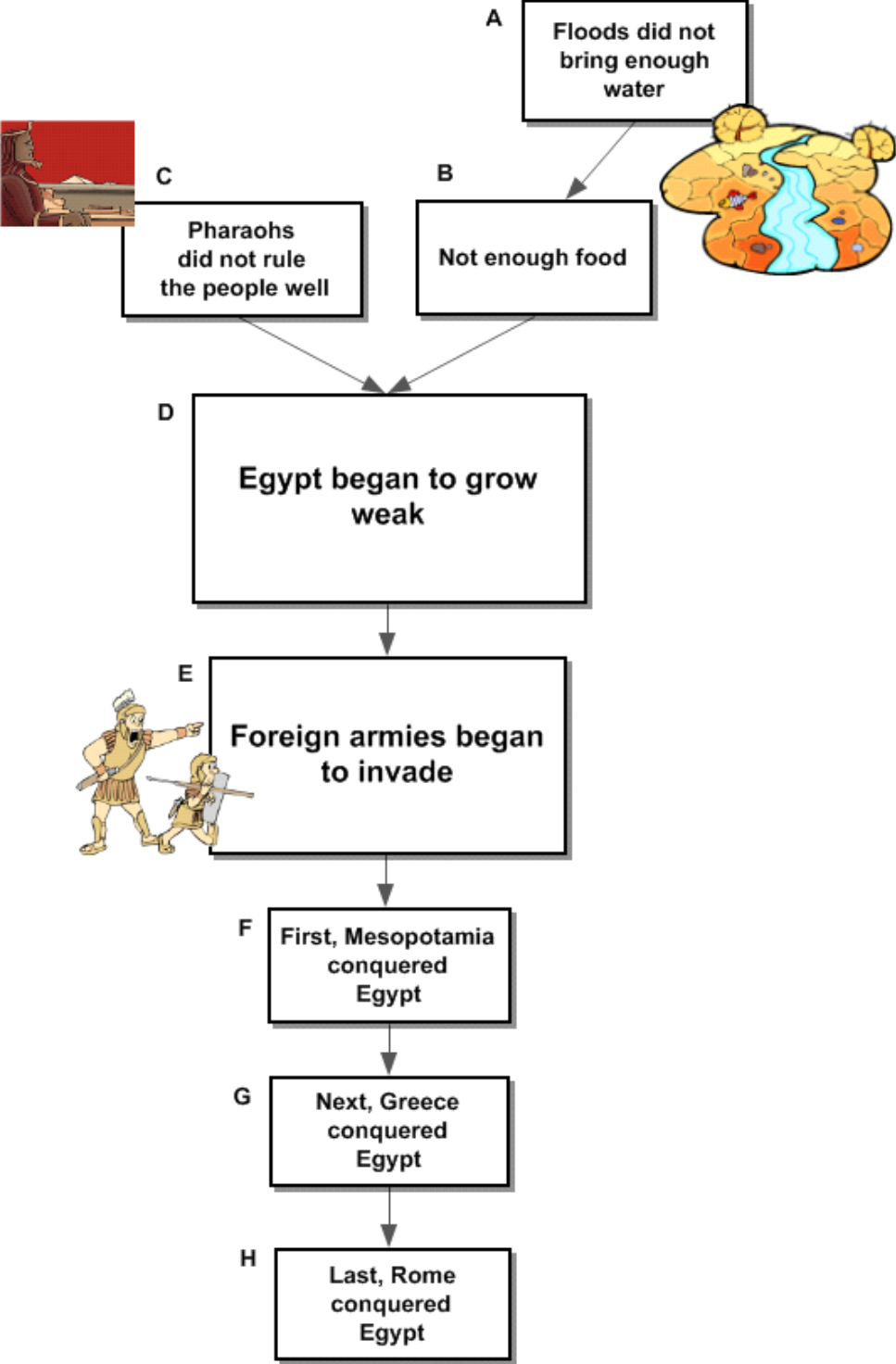
# Ancient Egyptian Contributions to Civilization



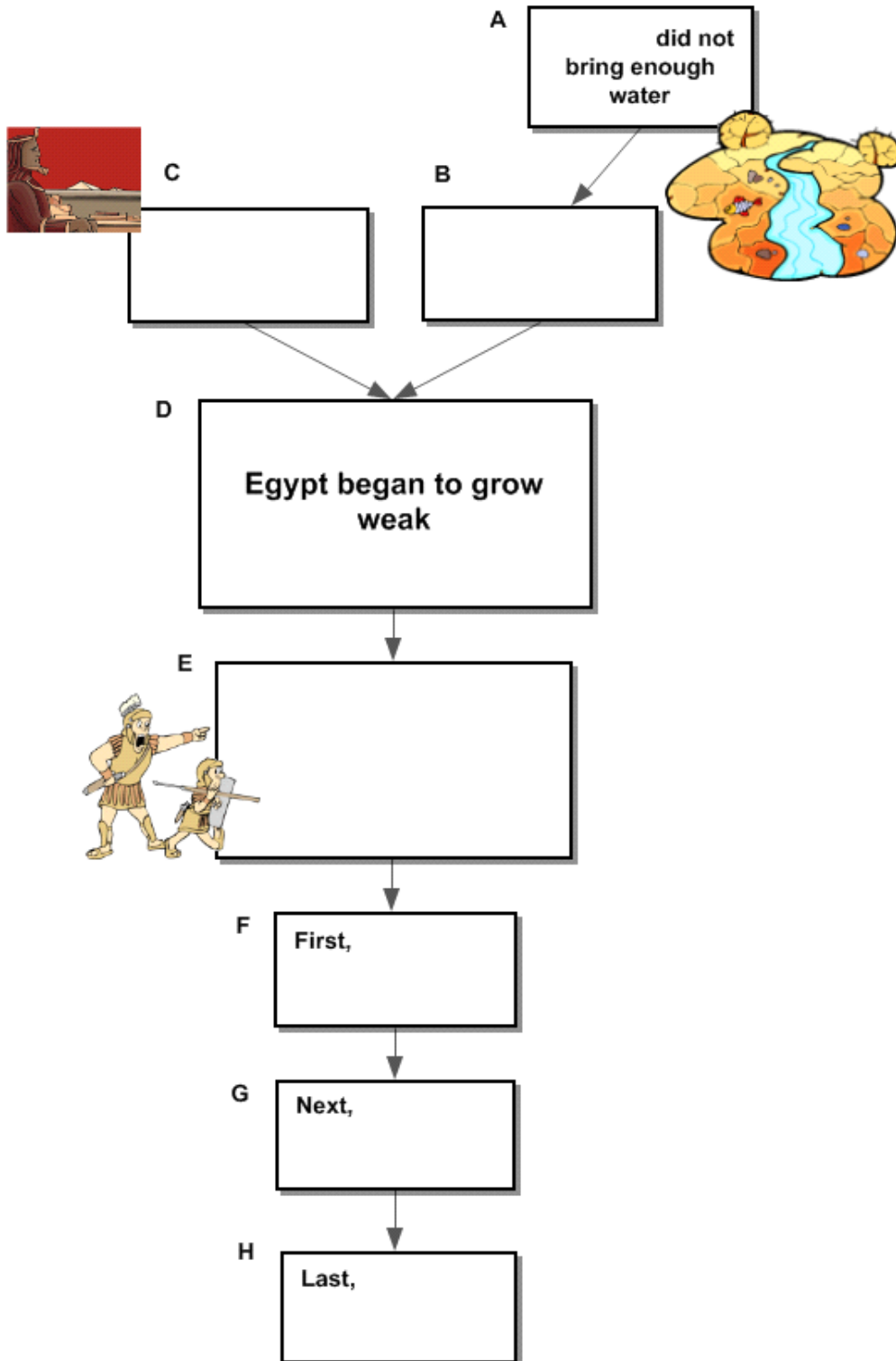
**Ancient Egyptian Contributions to Civilization**



# The Fall of Egypt



# The Fall of Egypt



## APPENDIX C

### SCRIPTS

#### Graphic Organizer 1 - Teacher Script

##### Ch. 5 Ancient Egypt

##### Unit 1 The Nile River Valley p. 43 – top of p. 44

##### Materials:

1. Elmo
2. Overhead Projector
3. Teacher version - Graphic Organizer (GO) “How Farming Began in Egypt”
4. Student version - Graphic Organizer “How Farming Began in Egypt”
5. Post-it notes
6. Students will need pencil and eraser

(You might want to have the section of the textbook in front of you for your reference)

(Have Elmo and overhead projector ready. Have *Student version* and *Teacher version of GO* ready.)

#### SET EXPECTATIONS

- T: We have read a section in the chapter on Ancient Egypt, now we’re going to review. As we review the information we are going to use a graphic organizer to help us remember the most important information.
- T: What are we going to use to help us remember the most important information?
- S: A graphic organizer.
- T: Yes, a graphic organizer. Graphic organizers are pictures that help you remember the most important information. What are graphic organizers?
- S: Pictures that help you remember the most important information.
- T: Confirm. Place *Student version of GO* on Elmo. This is what a graphic organizer looks like. You will be using one just like this to help remember important social studies information. On your copy some of the boxes have information and some don’t. As we review, you will be writing in information when I tell you.
- T: This graphic organizer will help you remember the most important information we read about in class last time. If we look at the top of the page we can see what the graphic organizer is about. (*Point to title*) What is it about, everyone?

- S: How farming began in Egypt.
- T: The top will always tell you what the graphic organizer is about. The boxes (*point to boxes on GO*) will tell you the important information. What will the boxes tell you?
- S: The important information.
- T: The lines and arrows (*point to the lines and arrows*) will tell you how information is related or connected. What will the lines and arrows tell you?
- S: How information is related or connected.
- T: As we review the information from our reading, we will move from box to box on the graphic organizer and talk about the most important information.
- S: Let's get ready to use the graphic organizer to help you remember the most important information from last class's reading. (*HAND OUT STUDENT VERSION OF GO. PLACE COVERED TEACHER'S VERSION ON ELMO-* expose cells as the information is presented in teacher script). Put your name at the top of the page. (Set expectations about writing and looking at the screen)
- (*Point to Box A on GO*) We have learned why people need water. Say it with me, get ready
- S: People need water to live and grow food
- T: In our reading, we learned how people in Egypt get the water they need to live and grow food. In Egypt, people need the river to bring them water. (*Uncover and point to Box B*) We learned the name of this river that brings water to Egypt. What is the name of the river that brings water to Egypt? *Call on individual student*
- S: *Answer:* the Nile River
- T: Write down "The Nile River" in box B. (*Point to Box B on GO*). Now we know how the people in Egypt get water. Say it with me (*point to Box B on GO*)
- S: The Nile River brings water to Egypt.
- T: When people in Egypt want water, where do they get it? *Call on individual student*
- S: *Answer:* The Nile River
- T: That's right, people in Egypt get water from the Nile River.
- T: The graphic organizer shows you how the ideas are related. Box A is pointing to Box B because since "People need water to live and grow food," then that tells you that people

in Egypt need a place to get water. Box B tells us that the Nile River brings water to Egypt and the people need this water to live and grow food. Why do people in Egypt need the water from the Nile River? (*Point to Box A*)

S: *Acceptable answer:* To live and grow food

T: Yes. (*Uncover and point to Box C*) What do the words in Box C say? Everyone.

S: Land near the river was fertile.

T: We learned the word fertile when we read. What does fertile mean? (Point to or refer to frontloaded vocabulary on board or handout)

S: Land that is good for growing food.

T: Yes, fertile means land that is good for growing food. So Box C tells us that the land near the river was fertile and good for growing food. Box B is pointing to Box C to show you that the water from the Nile River made the land in Egypt fertile.

T: What made the land near the river fertile?

S: *Answer:* The water from the Nile River

T: Confirm. (*Uncover and point to Box D*). Everyone, what do the words in Box D say?

S: Plants grew well.

T: That's right. The words in Box C are connected to Box D. They tell us that because the land near the river was fertile, plants grew well. Copy the words from Box D on your graphic organizer.

T: (*Uncover and point to Box E*) What does Box E say, everyone?

S: Farmers planted crops near the river

T: We read that when people first came to Egypt 10,000 years ago, they stayed because the land near the river was fertile. Box E tells us that farmers planted crops near the river. When we read, we learned that crops are plants that people grow for food. Why did farmers plant crops near the river? *Call on individual student*

S: *Acceptable answers:* Land is fertile. *or* There is water. *or* People need water to grow food.

T: Yes. Now let's look again at the top of the graphic organizer where it tells us what the graphic organizer is about. (*Point to the title of the GO*). Everyone, what is the graphic organizer about?

S: How farming began in Egypt

T: So, the graphic organizer shows you a picture about the important information on how farming began in Egypt. Because the Nile River brings water to Egypt, the people could use the water from the river to live and grow food. The Nile River was very important for the people in Egypt. Without the water from the river, they could not live. Now, we are going to look at more important information about how farming began in Egypt.

*(Uncover and point to Box F)* What do the words in Box F say?

S: The river floods every summer

T: We read about the flood in Egypt. What happens when there is a flood?

S: *Acceptable answer:* Lots of water covers the land; The water leaves behind soil (dirt), etc

T: Confirm (or refer back to frontload vocab). When there is a flood the land gets covered with water. In Egypt, there was a flood every summer. Copy the words from Box F on your graphic organizer.

T: *(Uncover and point to Box G)* What does it say in Box G, everyone?

S: Floods left layer of fertile soil

T: Yes, floods make water cover the land. In Egypt, when the water from the flood left, it left behind a layer (or a lot) of fertile soil on the land. What did the flood leave behind on the land?

S: *Answer:* fertile soil

T: Yes. The words in Box G are connected to the words in Box C. The flood left fertile soil on the land and the fertile soil helped to make the land near the river fertile. So, the floods made the land good for growing food. What did the floods do to the land? *Call on individual student*

S: *Answer:* Made it good for growing food.

T: We read that the farmers learned how to use the floodwater to help them even more. *(Uncover and point to Box H)*. Everyone, read Box H aloud.

S: Farmers trapped and saved floodwater.

T: Ok. Write the words in Box H on your GO.



T: We read that farmers learned how to trap and save the floodwater. What did they do with the floodwater next?

S: *Acceptable answer:* Took it to farms *or* Used it to grow food

T: *(Uncover and point to Box I)* What does Box I say, everyone?

S: Farmers brought floodwater to farms.

T: Yes. The farmers brought floodwater to the farms. The graphic organizer shows us that farmers used the water from floods to grow food on their farms.

*(Uncover and point to Box J)* Everyone read the words in Box J that tell us what happened after farmers brought floodwater to their farms.

S: People lived and worked together in small villages

T: Yes. The words in Box I are connected to the words in Box J to show us that people lived together in small villages because they brought floodwater to their farms. The people in ancient Egypt had to work and live together to use the floodwater to grow food. Why did people in Egypt live together in small villages?

S: *Acceptable answer:* They had to work together to bring floodwater. *or* They worked together to grow food.

T: Everyone fill in Box J on your graphic organizer. Write “small villages”

T: Let’s see how our graphic organizer helped you remember the most important information we read in our social studies book.

T: If we look at the top of the page we can see what the graphic organizer is about. *(Point to title)* What is it about, everyone?

S: How farming began in Egypt.

T: Now we can review the graphic organizer. Remember the boxes have the important information, the lines and arrows tell how the information is related or connected. I’ll ask you questions, see if you can answer them. Why do people need water? *(Point to Box A)* Everyone?

S: To live and grow food.

T: How did people in Egypt get water? *(Point to Box B)* *Call on individual*

S: The Nile River brings water to Egypt.

- T: Why did farmers plant crops near the river? (*Point to Box D*) *Call on individual*
- S: Plants grew well.
- T: Yes. How often did the Nile River flood? (*Point to Box F*)
- S: The river floods every summer
- T: Why did the floods make the land good for growing food? (*Point to Box G*)
- S: Floods left layer of fertile soil.
- T: What did the farmers learn to do with the floodwater? (*Point to Box H*)
- S: They trapped and saved it.
- T: What did they do with the water once they trapped and saved it? (*Point to Box I*)
- S: They brought it to the farm
- T: Why did people in Egypt live together in small villages?
- S: *Acceptable answer:* They had to work together to bring floodwater. *or* They worked together to grow food.
- T: We used the graphic organizer to help you review the important information from our social studies book. We will be using other graphic organizers to help us remember information for other parts of the chapter.

## Graphic Organizer 2 - Teacher Script

### Ch. 5 Ancient Egypt

#### Unit 2 The Pharaoh and Government – p. 44

#### Materials:

Elmo

Overhead Projector

Teacher version - Graphic Organizer “Government in Ancient Egypt”

Student version - Graphic Organizer “Government in Ancient Egypt”

Post-it notes

Students will need pencil and eraser

(You might want to have the section of the textbook in front of you for your reference)

*Place teacher version of GO on Elmo and cover it. Don't give students their GO until the script tells you to do so.*

T: Today we are going to use a graphic organizer to review some information that we have read about. What is a graphic organizer going to help us do?

*Call on individual students.*

S: *Answer:* Remember the most important information and how they are related or connected.

T: Let's look at the graphic organizer (*Uncover the Title only*). What is this graphic organizer going to be about?

S: Government in Ancient Egypt

T: How do you know?

S: The top always tells what the graphic organizer will be about.

T: (*Uncover the graphic organizer. Leave the post-its covering the Boxes*). This graphic organizer will tell us about the power that different people had in the government in ancient Egypt.

T: *HANDOUT STUDENT VERSION OF GRAPHIC ORGANIZER. Uncover the boxes as they are discussed in the script.*

We're going to complete the graphic organizer together. Remember you are going to fill in the empty boxes when I tell you. Put your name at the top of the page.

T: In our reading, we learned about the government under the pharaoh. (*Uncover and point to Box A*) We learned that the pharaoh is the most powerful person in Egypt. The pharaoh makes laws that everyone in Egypt must obey. Who is the most powerful person in Egypt? *Call on individual student*

S: *Answer:* The Pharaoh

T: Fill in Box A with the information about the pharaoh. (*Point to Box A on GO*).

T: When the pharaoh makes a law, who must obey the law?

S: *Answer:* Everyone in Egypt must obey the law.

T: That's right, everyone in ancient Egypt had to obey the laws that the Pharaoh made.

T: (*Uncover and point to Box B*) What do the words in Box B say? Everyone.

S: Nobles: the second most powerful people. They run the government.

T: Yes, the nobles are the second most powerful people. Only the pharaoh has more power than the nobles. Who has more power than the nobles? *Call on individual student*

S: *Answer:* The pharaoh.

T: That's right. So, we know that the nobles have the second most power. They run the government in ancient Egypt. Write the word "Nobles" in Box B.

T: Who are the second most powerful people in Egypt?

S: *Answer:* Nobles.

T: (*Uncover and point to Box C*). Everyone, what do the words in Box C say?

S: Artists: had less power than the nobles. They made statues and buildings.

T: Now we can see that the artists had less power than the nobles. That is why they are below the nobles in the graphic organizer. What did the artists make?

S: *Answer:* Statues and buildings.

T: Yes, the artists made statues and buildings. Who had more power than the artists?

S: *Answer:* Nobles and the Pharaoh. (*If students do not say both "Nobles" and "Pharaoh," say the correct answer and point to both higher levels in the pyramid*)

- T: Copy the words from Box C on your graphic organizer.
- T: (*Uncover and point to Box D*) What does Box D say, everyone?
- S: Farmers and workers: had no power in Egypt. They grew food and worked.
- T: Yes, the graphic organizer shows us that farmers and workers had no power in ancient Egypt. They had to work and grow food, but they had no power in the government. Write “Farmers and workers” in Box D on your graphic organizer (*Point to Box D*)
- T: Who had more power than the farmers and workers? *Call on individual student*
- S: *Answer:* Artists, nobles, and the Pharaoh.
- T: Yes. This graphic organizer shows a picture of the government in ancient Egypt.
- T: Now we can review the graphic organizer. I’ll ask you some questions, see if you can answer them without looking at your graphic organizer. See if you can picture the graphic organizer in your mind. (*Can ask questions of whole group or of individual students*)
- T: Who was the most powerful person in Egypt?
- S: The Pharaoh.
- T: Who made the laws in Egypt?
- S: The Pharaoh.
- T: Who were the second most powerful people in Egypt?
- S: The nobles.
- T: Who made statues and buildings in Egypt?
- S: Artists.
- T: Who had more power than the artists?
- S: The Nobles and the Pharaoh.
- T: Who had no power in Egypt?
- S: Farmers and workers.

T: We used the graphic organizer to help you review the important information about the government in ancient Egypt from our social studies book. We will be using other graphic organizers to help us remember information for other parts of the chapter.

### **Graphic Organizer 3 - Teacher Script**

#### **Ch. 5 Ancient Egypt**

#### **Unit 3 Egyptian Religion and the Pyramids – p. 45 – top of p. 47**

#### **Materials:**

Elmo

Overhead Projector

Teacher version - Graphic Organizer “Egyptian Religion and Life after Death”

Student version - Graphic Organizer “Egyptian Religion and Life after Death”

Post-it notes

Students will need pencil and eraser

(You might want to have the section of the textbook in front of you for your reference)

*Don't give students their GO until the script tells you to do so.*

T: Today we are going to use another graphic organizer to review information we have been studying.

T: *(Place Teacher version of GO on Elmo. Leave the post-its covering the Boxes)*  
What is this graphic organizer going to be about?

S: Egyptian religion and life after death.

T: Yes. This graphic organizer is a picture that shows the relationship between Egyptian religion and their beliefs about life after death.

T: *HANDOUT STUDENT VERSION OF GRAPHIC ORGANIZER. Uncover the boxes as they are discussed in the script.*

We're going to complete the graphic organizer together. Remember you're going to fill in the empty boxes when I tell you. Put your name at the top of the page.

Let's start with Box A. *(Uncover and point to Box A)* What does Box A say?

S: Egyptians believed in many gods.

T: Yes. In our reading, we learned about Egyptian religion. How many gods did Egyptians believe in?

S: *Answer:* many gods

- T: Write “many gods” in Box A on your graphic organizer.
- T: (*Uncover and point to Box B*) What do the words in Box B say? Everyone.
- S: The sun was a god called Ra.
- T: Yes, the Egyptians believed that the sun was a god and they called the sun god Ra. Ra was just one of the many gods that Egyptians believed in. Who was Ra? *Call on individual student*
- S: *Answer:* The Egyptian sun god.
- T: That’s right. (*Uncover and point to Box C*) What does it say in Box C, everyone?
- S: Egyptians believed people were like the sun.
- T: Yes, in our reading we learned that the Egyptians believed that people were like the sun. Write “like the sun” in Box C on your graphic organizer.
- T: Do you remember why Egyptians thought people were like the sun? *Call in individual students*
- S: *Acceptable answers:* the sun rises each day *or* people and the sun rise each day *or* the sun sets each day and people go to sleep each day
- T: (*Uncover and point to Box D*) What do the words say in Box D?
- S: The sun rises again each day.
- T: Ok. So, this tells us that the Egyptians thought that people were like the sun because the sun rises each day. People also rise each day after they sleep. Why did the Egyptians believe that people were like the sun? *Call in individual student*
- S: *Answer:* The sun rises again each day and so do people.
- T: Yes. Now, copy the words from Box D on your graphic organizer.
- T: (*Uncover and point to Box E*) What does Box E say, everyone?
- S: Egyptians believed people live again after death.
- T: Yes, we learned in our reading that the Egyptians believed people live again after death. The arrow pointing to Box E from Box C tells us that the words in Box E are connected to the words in Box C. The graphic organizer shows us that Egyptians believed people

live again after death because they believed that people were like the sun. Why did the Egyptians believe that people live again after death? *Call on individual student*

S: *Answer:* They believed people were like the sun.

T: Yes. Write the words for Box E on your graphic organizer. (*Point to Box E*)

T: Look back at the top of the graphic organizer (*Point to title*). This graphic organizer tells us about Egyptian religion and Egyptians' beliefs about life after death. Egyptians believed in many gods and one of those gods was the sun god Ra. We know that Egyptians believed that people lived again after death because they believed that people were like the sun. This is important to Egyptian religion.

Now, let's look at what the Egyptians believed you had to do to live again after you die. (*Uncover and point to Box F*) What do the words in Box F say?

S: Steps to live again

T: We learned that there were two steps in order to live again. (*Uncover and point to Box G*). The first step was to be mummified. Do you remember from the reading how the Egyptians made a person into a mummy? *Call on individual students*

S: *Acceptable answers:* Put chemicals on the body. Wrap the body in cloth. Put tar on the wrapped body. Make the body waterproof.

T: That's right. What was the first step for an Egyptian to live again after death?

S: Be mummified.

T: Yes. Write the words for Box G on your graphic organizer.

T: Now let's look at the second step for an Egyptian live again. (*Uncover and point to Box H*) What does it say in Box H?

S: Second, be placed in a tomb.

T: Yes after the body is made into a mummy it has to be placed in a tomb. What is a tomb? *Call on individual student*

S: *Answer:* A place where the dead are buried.

T: That's right. So, what was the second step for an Egyptian to live again?

S: *Answer:* Be placed in a tomb.

T: Yes. Now write the words for Box H on your graphic organizer.



- T: (*Uncover and point to Box I*) What do the words in Box I say?
- S: Tombs filled with objects and paintings.
- T: Yes. In our reading we learned that after the mummy was placed in the tomb, people would fill the tomb with all of the things that the dead person would need in their next life. What kind of objects would people place inside of the tomb? *Call on individual students*
- S: *Acceptable answers:* Objects the person needed in their next life: food, water, clothes, games
- T: That's right. The tombs were filled with many objects and paintings. Now, fill in the words on Box I of your graphic organizer.
- T: When pharaohs died their mummies were placed in special tombs. The tombs of the pharaohs were called pyramids. (*Uncover and point to Box J*) What do the words in Box J say?
- S: Pyramids: tombs for pharaohs.
- T: Yes. After a pharaoh died, their mummy would be placed in a pyramid. The pyramids, like regular tombs, were filled with many objects and paintings. What are pyramids? *Call on individual students*
- S: Tombs for pharaohs.
- T: Good. Fill in the words for Box J on your graphic organizer.
- T: People today have been able to learn a lot about ancient Egypt because of all the objects that have been found in pyramids and tombs. (*Uncover and point to Box K*) What does it say in Box K?
- S: How we learn about ancient Egyptians
- T: Yes. The objects and paintings found inside of tombs and pyramids are how we have learned about ancient Egyptians. So, how have people learned about ancient Egyptians?
- S: *Answer:* From the objects and paintings in tombs and pyramids.
- T: Now we can review the graphic organizer. I'll ask you some questions; see if you can answer them without looking at your graphic organizer. See if you can picture the graphic organizer in your mind. (*Can ask questions of whole group or of individual students*)
- T: In the Egyptian religion, how many gods were there?

S: Many gods

T: What did the Egyptians believe about the sun?

S: *Acceptable answers:* The sun was a god. People were like the sun. That people would live again because the sun rises again.

T: What did Egyptians believe happened to people when they died?

S: They would live again

T: What were the steps to be able to live again?

S: First, be mummified. Second, be placed in a tomb.

T: What did Egyptians place in tombs with the mummies?

S: Objects (Food, water, games, clothing) and paintings

T: Where were the mummies of pharaohs placed?

S: In pyramids

T: How have people learned about ancient Egyptians?

S: From the objects inside of tombs and pyramids.

T: We used the graphic organizer to help you review the important information about Egyptian religion from our social studies book. We will be using other graphic organizers to help us remember information for other parts of the chapter.

**Graphic Organizer 4 - Teacher Script****Ch. 5 Ancient Egypt****Unit 4 Egyptian Contributions to Civilization – p. 47 – top of p. 48****Materials:**

Elmo

Teacher version - Graphic Organizer “Ancient Egyptian Contributions to Civilization”

Student version - Graphic Organizer “Ancient Egyptian Contributions to Civilization”

Post-it notes

Students will need pencil and eraser

(You might want to have the section of the textbook in front of you for your reference)

*Don't give students their GO until the script tells you to do so.*

T: We are going to use a graphic organizer to review information we read about.

T: *(Place Teacher version of GO on Elmo. Leave the post-its covering the Boxes)*  
What is this graphic organizer going to be about?

S: Ancient Egyptian Contributions to Civilization.

T: Yes. This graphic organizer is a picture that will help us remember the most important information about ancient Egyptian contributions to civilization.

T: *HANDOUT STUDENT VERSION OF GRAPHIC ORGANIZER. Uncover the boxes as they are discussed in the script.*

We're going to complete the graphic organizer together. Remember you're going to fill in the empty boxes when I tell you. Put your name at the top of the page.

Let's start with Box A. *(Uncover and point to Box A)* What does Box A say?

S: Egyptians contributions to civilization.

T: We read about three different Egyptian contributions to civilization. What were the three Egyptian contributions to civilization that we read about?

S: *Answer: A calendar, papyrus, and hieroglyphics. (If students don't give answer, state the answer and then re-ask the question)*

T: Yes, the Egyptians invented a calendar, papyrus, and hieroglyphics. These inventions are all contributions to civilization.

T: (*Uncover and point to Box B*) What does it say in Box B? Everyone.

S: Hieroglyphics

T: Yes, one of the Egyptian inventions was hieroglyphics. Write “hieroglyphics” in Box B on your graphic organizer.

T: What do we know about hieroglyphics? *Call on individual students*

S: *Acceptable Answers:* It’s a kind of writing. It’s made of pictures. It is a language.

T: That’s right. (*Uncover and point to Box C*) What does it say in Box C, everyone?

S: Kind of writing system

T: Write those words in Box C of your graphic organizer.

T: (*Uncover and point to Box D*) What do the words say in Box D?

S: Made of pictures

T: Yes. Write the words from Box D on your graphic organizer.

T: (*Uncover and point to Box E*) What does Box E say, everyone?

S: A language

T: Yes, write the words from Box E on your graphic organizer.

T: We learned about hieroglyphics in our reading. Look at the graphic organizer. Boxes C, D, and E are all connected to Box B. This shows us that the words in those boxes are connected to the word in Box B. Box C, D, and E all tell important information about hieroglyphics. What do boxes C, D, and E tell us? *Call on individual student*

S: *Answer:* Important information about hieroglyphics.

T: Yes. Now, let’s look at another Egyptian contribution to civilization. (*Uncover and point to Box F*) What does it say in Box F?

S: Papyrus

T: Yes, one of the Egyptian inventions was papyrus. Write “papyrus” in Box F on your graphic organizer.

T: What do we know about papyrus? *Call on individual students*

- S: *Acceptable Answers:* It's a kind of paper. It's made from plants. They glued stems together to make it.
- T: That's right. (*Uncover and point to Box G*) What does it say in Box G, everyone?
- S: Kind of paper
- T: Write those words in Box G of your graphic organizer.
- T: (*Uncover and point to Box H*) What do the words say in Box H?
- S: Made of plants
- T: Yes. Write the words from Box H on your graphic organizer.
- T: What do boxes G and H tell us about papyrus? *Call on individual student*
- S: *Answer:* The important information about papyrus.
- T: That's right. Now, let's look at another Egyptian contribution to civilization. (*Uncover and point to Box I*) What does it say in Box I?
- S: Calendar
- T: Yes, one of the Egyptian inventions was a calendar. Write "calendar" in Box I on your graphic organizer.
- T: What do we know about the Egyptian calendar? *Call on individual students*
- S: *Acceptable Answers:* It was like our calendar today. It had days, months, and years. They got the idea from the flood coming once a year.
- T: That's right. (*Uncover and point to Box J*) What does it say in Box J, everyone?
- S: Egyptians noticed flood times
- T: The Egyptians came up with the idea to invent a calendar because they noticed that the flood came at the same time every year. How did the Egyptians come up with the idea to invent a calendar?
- S: *Answer:* They noticed the flood times. *Or* They noticed the flood came at the same time.
- T: Yes. Write the words for Box J on your graphic organizer.
- T: (*Uncover and point to Box K*) What do the words say in Box K?

S: Floods every 365 days

T: Yes. The flood came every 365 days. There are 365 days in a year, so that means that the flood came once a year. How often was there a flood in Egypt?

S: *Answer:* Every 365 days *or* Once a year

T: Write the words from Box K on your graphic organizer.

T: (*Uncover and point to Box L*) What do the words say in Box L?

S: Had days, months, and years

T: Yes, the Egyptian calendar was like our calendar today with days, months, and years. Write the words for Box L on your graphic organizer.

T: Now we can review the graphic organizer. I'm going to ask you some questions, use the graphic organizer to help you with the answers.

T: What are the three Egyptian contributions to civilization?

S: *Answer:* Hieroglyphics, papyrus, and calendar

T: What is the important information about hieroglyphics?

S: *Answer:* It's a kind of writing, it's made of pictures, and it's a language.

T: What is the important information about papyrus?

S: *Answer:* It's a kind of paper and it's made of plants.

T: How did Egyptians come up with the idea to invent a calendar?

S: *Answer:* They noticed the flood times. *Or* They noticed the flood came once a year (*or* every 365 days).

T: What is the important information about the Egyptian calendar?

S: *Answer:* It had days, months, and years. They got the idea from the Nile flood.

T: Great. We used the graphic organizer to remember the important information about ancient Egyptian contributions to civilization.

## Graphic Organizer 5 - Teacher Script

### Ch. 5 Ancient Egypt

#### Unit 5 The Fall of Egypt – p. 48

#### Materials:

Elmo

Overhead Projector

Teacher version - Graphic Organizer 5 “The Fall of Egypt”

Student version - Graphic Organizer 5 “The Fall of Egypt”

Post-it notes

Students will need pencil and eraser

(You might want to have the section of the textbook in front of you for your reference)

*Don't give students their GO until the script tells you to do so.*

T: Today we are going to use another graphic organizer to review information we read.

T: *(Place Teacher version of GO on Elmo. Leave the post-its covering the Boxes)*  
What is this graphic organizer going to be about?

S: The fall of Egypt.

T: Yes. This graphic organizer is a picture that shows the important information about why Egypt lost power. When you say that a country falls that means that the country lost power.

T: *HANDOUT STUDENT VERSION OF GRAPHIC ORGANIZER. Uncover the boxes as they are discussed in the script.*

We're going to complete the graphic organizer together. Remember you're going to fill in the empty boxes when I tell you. Put your name at the top of the page.

Let's start with Box A. *(Uncover and point to Box A)* What does Box A say?

S: Floods did not bring enough water.

T: Write “Floods” in Box A on your graphic organizer.

T: *(Uncover and point to Box B)* What do the words in Box B say? Everyone.

S: Not enough food.

- T: The graphic organizer shows you how the ideas are related. Box A is pointing to Box B because since “Floods did not bring enough water,” that meant that there was not enough water to be able to grow enough food for all the people in Egypt. So Box B tells us that there was not enough food because the floods did not bring enough water. Why was there not enough food? *Call on individual student*
- S: *Answer:* Floods did not bring enough water.
- T: That’s right. Write the words for Box B on your graphic organizer
- T: (*Uncover and point to Box C*) What does it say in Box C, everyone?
- S: Pharaohs did not rule the people well.
- T: At the same time that there was not enough food, the pharaohs were not ruling the people well in Egypt. That means that the pharaohs were not doing a good job of leading the people of Egypt.
- T: Write the words for Box C on your graphic organizer.
- T: (*Uncover and point to Box D*) What do the words say in Box D?
- S: Egypt began to grow weak.
- T: Yes. Box B and Box C are both pointing to Box D. This tells us that because the flood didn’t bring enough water to grow food and the pharaohs did not rule the people well, Egypt began to grow weak. Why did Egypt begin to grow weak? *Call in individual students*
- S: *Answer:* The floods didn’t bring enough water to grow food and the pharaohs did not rule the people well.
- T: (*Uncover and point to Box E*) What does Box E say, everyone?
- S: Foreign armies began to invade.
- T: Yes, foreign armies began to invade Egypt after Egypt began to grow weak. When did foreign armies begin to invade Egypt? *Call on individual student*
- S: *Answer:* After Egypt began to grow weak.
- T: Yes. Write the words for Box E on your graphic organizer. (*Point to Box E*)
- T: Look back at the top of the graphic organizer (*Point to title*). This graphic organizer tells us about the fall of Egypt. We know that if a country falls that means that it loses power. In Box E (*Point to Box E*) it shows that foreign armies began to invade Egypt. Since we



know that this graphic organizer is about the fall of Egypt, it is important to know who conquered Egypt and took away their power.

Now, let's look at which 3 countries conquered Egypt. (*Uncover and point to Box F*)  
What do the words in Box F say?

S: First, Mesopotamia conquered Egypt.

T: Write the words for Box F on your graphic organizer.

T: (*Uncover and point to Box G*). What does it say in Box G?

S: Next, Greece conquered Egypt.

T: Write the words for Box G on your graphic organizer.

T: So which country was the second country to conquer Egypt?

S: *Answer:* Greece

T: (*Uncover and point to Box H*) What does it say in Box H?

S: Last, Rome conquered Egypt.

T: Write the words for Box H on your graphic organizer.

T: Now we can review the graphic organizer. I'm going to ask you some questions. You can use your graphic organizer to help you answer. (*Can ask questions of whole group or of individual students*)

T: What happened in Egypt that made it begin to grow weak?

S: *Answer:* Floods did not bring enough water to grow food and the pharaohs did not rule the people well.

T: What happened after Egypt began to grow weak?

S: *Answer:* Foreign armies began to invade.

T: Which country was the first country to invade Egypt?

S: *Answer:* Mesopotamia

T: Which country invaded Egypt after Mesopotamia?

S: *Answer:* Greece

T: Which country was the last country to invade Egypt?

S: *Answer:* Rome

T: What were the 3 countries that invaded Egypt?

S: *Answer:* Mesopotamia, Greece, and Rome

T: Great. We used the graphic organizer to help you remember the important information about the fall of Egypt from our social studies book. We've used different graphic organizers to remember the important information about ancient Egypt from the chapter.

**APPENDIX D**

**TESTS**

**Ancient Egypt Pre-Test with Answer Key**

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

Sample Question:

The capital of Hawaii is

- a. Honolulu.
  - b. Waianae.
  - b. Hilo.
  - c. Hawaii Kai.
- 

1. The longest river in the world is the

- a. Tigris River.
- \*b. Nile River.
- c. Euphrates River.
- d. Niger River.

2. When the Nile River floods in Egypt,

- a. people are sad.
- b. there is not enough food.
- \*c. farmers can grow more food.
- d. people have to hide from the crocodiles.

3. Farming began in Egypt because

- \*a. of the water from the Nile River.
- b. it rained all the time.
- c. the pharaoh told the people they had to farm.

- d. the Romans showed the Egyptians how to farm.
4. Egyptian civilization began \_\_\_\_\_ years ago.
- \*a. 10,000
  - b. 1,500
  - c. 2,075
  - d. 700
5. After King Menes built a large palace for himself,
- a. he felt bad for spending too much money.
  - b. there was a fire in the palace.
  - c. he invited all the workers to live in it.
  - \*d. Egypt's kings were called pharaohs.
6. When the pharaoh of Egypt made a law,
- \*a. all Egyptians had to obey the law.
  - b. only women had to obey the law.
  - c. no one had to obey the law.
  - d. only men had to obey the law.
7. Egyptians thought that because the sun rose again each day,
- a. no one should sleep during the day.
  - b. people were given a new life each day.
  - \*c. people would live again after they died.
  - d. crops should only be planted at night.
8. The Egyptians believed in
- \*a. many gods.
  - b. one god.
  - c. no gods.
  - d. two gods.

9. Egyptians believed that in order to live again after death,
- a. you had to always be kind to others.
  - b. your body had to be burned.
  - c. you had to be a pharaoh.
  - \*d. your body had to be protected and placed in a tomb.
10. Egyptian tombs were filled with
- a. lots of sand to protect the body.
  - \*b. things that the person needed in their next life.
  - c. animals to keep away bad spirits.
  - d. water from the Nile river.
11. After an Egyptian was mummified, their body was
- a. burned over a big fire.
  - b. floated out to sea.
  - c. buried in a graveyard.
  - \*d. placed in a tomb.
12. The Egyptian tombs and the objects in them have
- a. made it hard to understand ancient Egyptians.
  - \*b. helped people to learn about ancient Egyptians.
  - c. all been destroyed.
  - d. only helped to learn about the pharaohs.
13. The pharaoh made
- \*a. laws for the people in Egypt.
  - b. canals to help farmers trap water.
  - c. papyrus for people to write on.
  - d. calendars to tell when the Nile would flood.

14. Egyptians believed that after death people
- a. became gods and goddesses.
  - b. went to a foreign country.
  - c. changed into animals.
  - \*d. would live again.
15. The pyramids were
- \*a. tombs for the Egyptian pharaohs.
  - b. tombs for the Egyptian workers.
  - c. writing material the Egyptians used.
  - d. large Egyptian trading ships.
16. Egyptian contributions to civilization included
- a. ships and metal tools.
  - b. new technology for farming.
  - \*c. a kind of paper, a written language, and a calendar.
  - d. a new way to catch fish.
17. The Egyptian system of writing is called
- a. papyrus.
  - \*b. hieroglyphics.
  - c. pharaohs.
  - d. Tutankhamen.
18. When the pharaohs did not rule the Egyptian people well,
- a. the Egyptian people moved to a different country.
  - b. the pharaohs became more powerful.
  - \*c. Egypt became a weak country.
  - d. other countries offered to help the pharaohs.

19. Egypt was invaded by

- a. Japanese and Germans.
- b. Spanish, Portuguese, and Iranians.
- c. Incas and Mayans.
- \*d. Mesopotamians, Greeks, and Romans.

20. Tutankhamen was a

- a. musician.
- b. farmer.
- \*c. pharaoh.
- d. doctor.

**Ancient Egypt Post-Test with Answer Key**

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

Sample Question:

The capital of Hawaii is

- a. Honolulu.
  - b. Waianae.
  - b. Hilo.
  - c. Hawaii Kai.
- 

1. The Egyptian tombs and the objects in them have
  - a. made it hard to understand ancient Egyptians.
  - \*b. helped people to learn about ancient Egyptians.
  - c. all been destroyed.
  - d. only helped to learn about the pharaohs.
  
2. Farming began in Egypt because
  - \*a. of the water from the Nile River.
  - b. it rained all the time.
  - c. the pharaoh told the people they had to farm.
  - d. the Romans showed the Egyptians how to farm.
  
3. Egyptian contributions to civilization included
  - a. ships and metal tools.
  - b. new technology for farming.
  - \*c. a kind of paper, a written language, and a calendar.
  - d. a new way to catch fish.
  
4. The longest river in the world is the
  - a. Tigris River.



- \*b. Nile River.
- c. Euphrates River.
- d. Niger River.

5. The pharaoh made

- \*a. laws for the people in Egypt.
- b. canals to help farmers trap water.
- c. papyrus for people to write on.
- d. calendars to tell when the Nile would flood.

6. Egyptians thought that because the sun rose again each day,

- a. no one should sleep during the day.
- b. people were given a new life each day.
- \*c. people would live again after they died.
- d. crops should only be planted at night.

7. The Egyptians believed in

- \*a. many gods.
- b. one god.
- c. no gods.
- d. two gods.

8. After an Egyptian was mummified, their body was

- a. burned over a big fire.
- b. floated out to sea.
- c. buried in a graveyard.
- \*d. placed in a tomb.

9. Egyptians believed that after death people

- a. became gods and goddesses.
- b. went to a foreign country.
- c. changed into animals.
- \*d. would live again.

10. Tutankhamen was a

- a. musician.
- b. farmer.
- \*c. pharaoh.
- d. doctor.

11. When the Nile River floods in Egypt,

- a. people are sad.
- b. there is not enough food.
- \*c. farmers can grow more food.
- d. people have to hide from the crocodiles.

12. Egyptian civilization began \_\_\_\_\_ years ago.

- \*a. 10,000
- b. 1,500
- c. 2,075
- d. 700

13. Egyptians believed that in order to live again after death,

- a. you had to always be kind to others.
- b. your body had to be burned.
- c. you had to be a pharaoh.
- \*d. your body had to be protected and placed in a tomb.

14. After King Menes built a large palace for himself,
- a. he felt bad for spending too much money.
  - b. there was a fire in the palace.
  - c. he invited all the workers to live in it.
  - \*d. Egypt's kings were called pharaohs.
15. Egyptian tombs were filled with
- a. lots of sand to protect the body.
  - \*b. things that the person needed in their next life.
  - c. animals to keep away bad spirits.
  - d. water from the Nile river.
16. The pyramids were
- \*a. tombs for the Egyptian pharaohs.
  - b. tombs for the Egyptian workers.
  - c. writing material the Egyptians used.
  - d. large Egyptian trading ships.
17. When the pharaoh of Egypt made a law,
- \*a. all Egyptians had to obey the law.
  - b. only women had to obey the law.
  - c. no one had to obey the law.
  - d. only men had to obey the law.
18. When the pharaohs did not rule the Egyptian people well,
- a. the Egyptian people moved to a different country.
  - b. the pharaohs became more powerful.
  - \*c. Egypt became a weak country.
  - d. other countries offered to help the pharaohs.

19. The Egyptian system of writing is called

- a. papyrus.
- \*b. hieroglyphics.
- c. pharaohs.
- d. Tutankhamen.

20. Egypt was invaded by

- a. Japanese and Germans.
- b. Spanish, Portuguese, and Iranians.
- c. Incas and Mayans.
- \*d. Mesopotamians, Greeks, and Romans.

**APPENDIX E**

**QUIZZES**

**Quiz 1: The Nile River Valley ANSWER KEY**

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

1. Once every summer the land around the Nile River has
  - a. a landslide.
  - b. an earthquake.
  - c. a drought.
  - \*d. a flood.
2. Egypt gets \_\_\_\_\_ rain.
  - \*a. little
  - b. lots of
  - c. too much
  - d. no
3. Egyptian farmers worked together to bring floodwater to their
  - a. boats.
  - b. tombs.
  - \*c. farms.
  - d. lake.
4. Egyptians learned how to trap and save
  - a. saltwater.
  - \*b. floodwater.
  - c. seawater.
  - d. bathwater.
5. How long is the Nile River?
  - \*a. 4,000 miles.
  - b. 10 miles.
  - c. 500 miles.

d. 2,000 miles.

### Quiz 2: The Pharaoh and the Government ANSWER KEY

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

1. 5,000 years ago, the first king of Egypt was

- \*a. Menes.
- b. Tutankhamen.
- c. Hatshepsut.
- d. Raneb.

2. In Egypt, artists had less power than

- a. farmers.
- b. children.
- \*c. nobles.
- d. women.

3. The most powerful person in Egypt was

- a. an artist.
- b. a farmer.
- c. a noble
- \*d. a pharaoh.

4. The Egyptian word *pharaoh* means

- \*a. great palace.
- b. long river.
- c. preserved body.
- d. small village.

5. Menes built a new capital city named

- a. Cairo.
- \*b. Memphis.
- c. Giza.
- d. Alexandria.

**Quiz 3: Egyptian Religion and the Pyramids ANSWER KEY**

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

1. Egyptians believed in
  - a. one god.
  - \*b. many gods.
  - c. two gods.
  - d. no gods.
2. The largest pyramid in Egypt is called the \_\_\_\_\_ Pyramid.
  - a. Sphinx
  - \*b. Great
  - c. Pharaoh's
  - d. Gold
3. Food, water, games, clothing, and other objects were placed by the mummy in their
  - a. bed.
  - b. coffin.
  - c. house.
  - \*d. tomb.
4. Tutankhamen died when he was young, so he was called the
  - \*a. boy-king.
  - b. poor-king.
  - c. man-king.
  - d. little-king.
5. Egyptians believed a dead person had to be placed in a tomb to
  - a. go to heaven.
  - b. sleep forever.
  - \*c. live again.
  - d. keep away ghosts.

**Quiz 4: Egyptian Contributions to Civilization ANSWER KEY**

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

1. When the Egyptians noticed that a flood came once every 365 days, they invented

- \*a. a calendar.
- b. papyrus.
- c. hieroglyphics.
- d. mummification.

2. Hieroglyphics is a language made by putting together

- a. letters.
- b. words.
- \*c. pictures.
- d. sentences.

3. The English word *paper* comes from the Egyptian word

- a. pharaoh.
- b. prophet.
- c. pyramid
- \*d. papyrus.

4. Egyptians invented a kind of writing called

- \*a. hieroglyphics.
- b. cursive.
- c. papyrus.
- d. script.

5. Egyptians glued, soaked, and dried plants together to make

- a. bowls.
- \*b. papyrus.
- c. clothes.
- d. rope.



**Quiz 5: The Fall of Egypt ANSWER KEY**

Directions: First, read each question and each of the possible answers completely. Next, circle the letter next to the best answer.

1. Egypt was a proud and powerful country for more than

- a. 25,000 years.
- \*b. 1,000 years.
- c. 3,000 years.
- d. 15,000 years

2. Egypt began to lose power because

- \*a. the pharaohs did not rule the people well.
- b. everyone in Egypt got very sick.
- c. there was a big flood.
- d. an earthquake destroyed their country.

3. Egypt was first conquered by

- a. Rome.
- b. Greece.
- c. Israel.
- \*d. Mesopotamia

4. The second country to invade Egypt was

- a. Rome.
- \*b. Greece.
- c. Israel.
- d. Mesopotamia.

5. When Egypt became weak,

- a. they invaded Rome.
- b. they sold their gold.
- \*c. foreign armies invaded Egypt.
- d. Mesopotamians came to help Egypt.

**APPENDIX F**

**STUDENT QUESTIONNAIRE:**

*Study on Using Visuals to Improve Reading Skills*

Please do not write your name on the paper. The answers to these questions will help me to understand what you think about the teaching strategies your teacher used during the study.

For each question, please circle the statement that shows your answer to the question.

1. Do you think that the graphic organizers helped you to be a better reader?

Yes                      Maybe                      No

2. Do you like using graphic organizers?

Yes                      It's OK                      No

**APPENDIX G**

**TEACHER QUESTIONNAIRE FOR RESEARCH PROJECT**

*The Effect of Graphic Organizers on Reading Comprehension: A Case Study of English Language Learners with Learning Disabilities in a Honolulu Middle School*

**Please rate each of the following 5 items based on the response scale by circling the number that corresponds to your response:**

- 1 = strongly disagree
- 2 = disagree
- 3 = undecided
- 4 = agree
- 5 = strongly agree

1. I found this intervention to be effective with my students.

Strongly disagree			→			Strongly agree
1	2	3	4	5		

2. I will use these instructional strategies in my regular curriculum.

Strongly disagree			→			Strongly agree
1	2	3	4	5		

3. The graphic organizers facilitated the reading comprehension of my students who are English language learners.

Strongly disagree			→			Strongly agree
1	2	3	4	5		

4. The graphic organizers facilitated the reading comprehension of my student who is an English language learner with learning disabilities.

Strongly disagree			→			Strongly agree
1	2	3	4	5		

5. This intervention was easy to implement.

Strongly disagree		→		Strongly agree
1	2	3	4	5

Please write your response to the following 3 items.

1. Do you have any changes or suggestions that you would like to make for the instructional strategies and/or materials used in the intervention? Please list them.

2. Do you have any other areas of concern regarding the academic progress of your students who are English language learners with learning disabilities? Please list them.

3. Do you have any other suggestions for teaching English language learners with learning disabilities? Please list them.

**APPENDIX H**

**STUDENT INTERVIEW QUESTIONS**

What did you think was easy about the lesson?

What did you think was hard about the lesson?

Do you understand the reading?

Do you think you are a good reader?

Do you like using the graphic organizers? Why?

**APPENDIX I**

**ESSAYS**

**Essay 1**

**Directions:** Read the question completely. Write your best answer to the question. Try to write as much as you can.

1. Ancient Egyptians believed that people live again after death. Why did Egyptians believe that people live again after death? What had to happen for a person to be able to live again after death?

**Student: Suzie**

God Ra help them to be happen after death because if they after death they would wrapped in cloth mummification they will put death body in tomb.

The second paragraph is ancient Egyptians believed god to make people to live again.

Total words: 41

Relevant relational knowledge statements	“God Ra help them to happen after death” “because if they after death they would wrapped in cloth mummification” “they will put death body in tomb”	3
Factual statements		0
Erroneous relational knowledge statements	“ancient Egyptians believed god to make people to live again”	1

**Student: Mark**

Egyptians believed that people live again after death because the sun rises again each day. They believe in many gods.

The step of the person will live again after death. First, be mummified. Second, be place in a tomb.

Total words: 39

Relevant relational knowledge statements	“Egyptians believe that people live again after death because the sun rises again each day” “First, be mummified.” “Second, be place in a tomb”	3
Factual statements	“They believe in many gods”	1
Erroneous relational knowledge statements		0

**Student: Chris**

Why: because they believed many gods and they will live again because King Tut leave a objects and jewelries so the Egyptians will use the things.

Total words: 26

Relevant relational knowledge statements		0
Factual statements		0
Erroneous relational knowledge statements	“because they believed many gods” “they will live again because King Tut leave a objects and jewelries so the Egyptians will use the things”	2

**Essay 2**

**Directions:** Read the question completely. Write your best answer to the question. Try to write as much as you can.

1. Ancient Egypt was a powerful country for more than a thousand years. About 3,000 years ago, Egypt began to grow weak and then Egypt lost power. Tell what happened that made Egypt begin to grow weak and then lose power.

**Student: Suzie**

Pharaohs don't rule the people well and not enough foods and floods enough water. The conquered is Mesopotamia of Egypt, Greece of Egypt, and Rome of Egypt.

Total words: 27

Relevant relational knowledge statements	“Pharaohs don’t rule the people well” “not enough foods and floods enough water” “The conquered is Mesopotamia of Egypt, Greece of Egypt, and Rome of Egypt”	5
Factual statements		0
Erroneous relational knowledge statements		0

**Student: Mark**

Egypt began to grow weak and Egypt lost power because they conquered by the 3 countries. First, Mesopotamia conquered Egypt. Second, Greece conquered Egypt. Then last, the Rome conquered Egypt. The Egypt conquered because Pharaoh did not rule the people well and there were not enough food.

Total words: 47

Relevant relational	“Egypt began to grow weak and Egypt lost	6
---------------------	--	---



knowledge statements	power because they conquered by the 3 countries” “First, Mesopotamia conquered Egypt.” “Second, Greece conquered Egypt.” “Then last, the Rome conquered Egypt.” “The Egypt conquered because Pharaoh did not rule the people well” “there were not enough food.”	
Factual statements		0
Erroneous relational knowledge statements		0

**Student: Chris**

The flood did not bring enough water, not enough food and the pharaohs did not rule well. The Mesopotamia Greece and Rome conquered Egypt.

Total words: 24

Relevant relational knowledge statements	“The flood did not bring enough water, not enough food” “the pharaohs did not rule the people well” “The Mesopotamia Greece and Rome conquered Egypt.”	6
Factual statements		0
Erroneous relational knowledge statements		0