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ABSTRACT

Three previous investigations of the effects of students' metacognitive awareness of question-answer relationships on reading comprehension led to the development of a four-session question-answer relationship (QAR) training program which can be used as a supplement to a regular reading program. The QAR in the proposed training program is based on the Pearson and Johnson taxonomy, which categorizes questions in terms of the relationships between the questions and possible sources of response information, both in the text and within the reader's background. As a result of the QAR instruction, the students should be able to identify a QAR, select the appropriate strategy for locating the response information, and provide an adequate response. The first lesson in the training program introduces the QAR concept and terminology, while the second lesson introduces slightly longer passages with up to five questions per passage. The third lesson provides practice on the QAR task using one longer passage on a single topic, and the last lesson involves work with material typically found in classrooms. (Appendixes include transparency masters, student handbooks for lessons one through three, basal-type passages, and maintenance passages.) (HOD)

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IMPROVING QUESTION-ANSWERING
PERFORMANCE THROUGH INSTRUCTION

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Improving Question-Answering Performance Through Instruction

Throughout their careers in school, students are frequently faced with the task of responding to questions. Question-asking on the part of the teacher constitutes a relatively large proportion of the instructional program (Tierney, 1976). Students must respond not only to teacher-generated questions but to questions in content area texts, in workbooks, and in standardized and informal tests. Questions form a tool for diagnosis and assessment, as well as a basis for group discussions. Research (Frase, 1968; Rothkopf, 1966) has indicated that questions used along with texts can be an effective means for facilitating understanding; and that different types of questions exist, each with its own set of task demands (Barrett, 1976; Pearson & Johnson, 1978). Based on the prevalence of questions and the suggestion by the research that questions can be one way to aid learning, an important instructional consideration arises: How can we best help students learn to cope with and appropriately respond to those questions which they so often face?

The Research

Two areas of research, metacognition and the development of question taxonomies, provide a basis for the development of an instructional program for teaching about the availability and use of question-answering strategies. Metacognition has been concerned with what a person knows about learning activities, as well as how a person controls (decides when and how to use) learning strategies. The research in question taxonomy development is largely concerned with identifying different types of questions that can be asked in the learning environment.

Metacognition is a term that is meant to describe a process closely related to cognition, or understanding: the learners' knowledge about cognition. In terms of the reading process, metacognition is often referred to as metacomprehension. While comprehension indicates that some knowledge has been gained, metacomprehension involves knowing whether one does or does not understand a text; knowing how one can improve one's understanding of the text; or knowing what one can do to demonstrate knowledge of the text. It is a sort of "secondary knowledge." Metacomprehension involves the readers' knowledge of strategies that can be used during the entire reading process, from prereading to postreading activities. For example, a reader may read along quite smoothly then suddenly realize that the text does not make sense; this realization is a form of metacomprehension. The reader may then engage in a fix-up strategy such as rereading the material.

Metacomprehension is concerned with both readers' knowledge of the reading process as well as their control of strategies related to reading. The distinction between knowledge of certain specific learning strategies and control of these same strategies is an important one. For example, a child may know that an appropriate strategy for answering comprehension questions involves retrieving relevant information from his or her past experiences. This would represent knowledge of a particular strategy. However, if students apply this strategy indiscriminately when answering all questions, including those requiring text-based information, they are not really in control of that strategy. They have failed to consider appropriateness when selecting the strategy.

Recent studies in the area of metacomprehension have indicated that instruction can facilitate both children's knowledge and control of learning activities. Day (1980) has instructed students in the use of summarization rules, enhancing students' ability to understand main ideas. Hansen (1981) has trained children to draw upon background knowledge, increasing children's inferential ability. Raphael (1981) instructed students in the application of question-answering strategies, improving students' performance on comprehension tests. Thus, research has demonstrated that students can be instructed to use learning strategies to improve their comprehension.

The research in metacognition has demonstrated the success of training students in the use of learning strategies, although the studies described thus far have been conducted outside the ongoing classroom curriculum. The purpose of this paper is to describe a successful extension of this work into the traditional developmental reading program.

The development of this training program for question-answering strategies involved the examination of a second body of literature, question taxonomies. Question taxonomies attempt to classify questions according to the type of cognitive activity they elicit. Bloom's (1956) taxonomy of educational objectives has been influential in the development of various reading comprehension taxonomies (e.g. Sanders, 1966; Barrett, 1976). These have attempted to categorize questions as literal, inferential, and evaluative. The problem with these taxonomies is that they typically consider questions as isolated units. Yet, to answer a question, one must consider not only the question itself, but also the possible sources of answer information.

A Taxonomy of Questions

Pearson and Johnson (1978) proposed a simple taxonomy specifically designed to categorize questions in terms of the relationship designed to categorize questions in terms of the relationship between the question and possible sources of response information. These sources are (1) the text to which the question refers and (2) the reader's own knowledge base. The authors recognized that both sources provide information for answering a question. In addition, information located in the text may be either explicitly stated or inferred from the integration of textual information. Thus, the proposed taxonomy has three categories: text explicit (information to be used for the most appropriate response is stated explicitly in the text), text implicit (response information is located in the text but requires the integration of textual material), and script implicit (response information is located in the reader's knowledge base). These three relationships are illustrated by the following examples.

Assume a fifth grade student has been asked the question,

(1) What are three causes of the Civil War?

after reading a Social Studies text which included the following statement:

(2) Three causes of the Civil War were political unrest, economic hardships, and the slavery issue.

To answer question (1) the student would have the relatively simple task of locating a single sentence and writing the three reasons explicitly stated. This represents a text explicit (TE) question-answer relationship (QAR).

Next assume that the fifth-grade student has read a chapter on the Civil War from his Social Studies text. The twelve page chapter was divided into three sections, one each on the political climate, the economic situation, and the slavery issue. To answer question (1) the student could still use text information, but now must integrate up to twelve pages of text material. This represents a text implicit (TI) question-answer relationship.

Finally, assume the student had completed reading a treatise on wars in general with no mention of the Civil War, then was asked question (1). The student would need to reply with information located in his or her knowledge base. This represents a script implicit (SI) question-answer relationship.

The Pearson and Johnson (1978) taxonomy, by classifying questions in terms of a question-answer relationship (QAR) simplifies instruction in the use of question-answering strategies. The three categories not only define types of questions, but by their very nature indicate the requirements of the response task. A student must either locate information explicitly stated within one sentence or integrate across sentences, or must search their own knowledge base.

Program Development in QARs

The program to be described in this article is based upon a series of three studies which investigated how students' metacognitive awareness of question-answer relationships affects their performance levels on post-reading comprehension tests. The first study (Raphael, Winograd, & Pearson, 1980) required fourth, sixth, and eighth grade students of all ability levels to respond to questions from each of the three Pearson and

Johnson categories and to indicate which strategy they thought they had used to answer each of the questions. The results revealed that the more skilled readers at each grade level produced the highest quality answers, and were most adept at using the appropriate question-answering strategy. For example, skilled readers who identified a QAR as being from the TI category were more likely than less skilled readers to provide an answer which required the integration of text information, and to provide a correct response using that strategy. Less skilled readers were more inconsistent, providing responses from the text or their knowledge base regardless of their QAR identifications and often, as a result, providing incorrect response information.

To see if less skilled readers could be taught to recognize and implement appropriate question-answering strategies, Raphael (1981) conducted a second study. In this one, she trained fourth, sixth, and eighth grade students to be aware of the three QARs and the implied strategies for locating appropriate response information. She then compared these students' performance to other students who had not received the training program. These results suggest that less skilled readers, after training, could perform at a level equal to more skilled readers in the untrained group.

Since the instructional program was effective, a third study (Raphael & Wonnacott, 1981) was conducted to assess the ease of implementing the training program as part of an ongoing developmental reading curriculum. Raphael and Wonnacott taught six fourth grade teachers how to train their students to answer questions, using the QAR program, then tested their students' performance levels on postreading comprehension questions.

They found that the teachers were very enthusiastic about the program itself, and that the students were able to learn how to use QARs to determine the most effective way of locating information to answer a question. Students in the QAR instructional program, as compared to students who did not receive any training, once again performed at a higher level.

In summary, the research indicates that question-answering comprises a large part of the students' daily school activities, and questions can be an effective means for improving comprehension. A number of question types exist, each with corresponding question-answering strategies. Further, studies investigating an instructional program designed to heighten students' awareness of QARs have demonstrated that the program is effective and easily implemented by teachers as part of their ongoing curriculum. The rest of this article will be devoted to a description of the program.

The Instructional Program

In this section, terminology used with students will be described, followed by an explanation and description of the learning task. Also discussed will be the areas in which feedback should be provided. Once this background has been provided, a four-day program designed to introduce QARs and strategies will be described in detail. Throughout this section, the reader is directed to relevant appendices which provide a set of instructional materials.

Terminology

The question-answer relationships (QARs) described in this article are based upon the Pearson and Johnson (1978) question taxonomy. Mnemonics

will be used rather than the terms "text explicit," "text implicit" and "script implicit." These mnemonics can then be used as a guide for generating questions and for helping readers to select an appropriate question-answering strategy. The purpose of this section will be to describe each QAR using these mnemonics or operational terms. When a question and answer are referred to, the term QAR will be applied. The use of the word "question" will refer to the question in isolation from its response.

A text explicit QAR is defined as one in which the words used to derive the question and the ones used to form an answer are located within a single sentence. For example, the sentence

(3) John rode the horse.

can be syntactically altered to form the following text explicit QAR:

(4) Who rode the horse? (John)

In describing this QAR to students, the mnemonic "Right There" is used to underline the relationship in which the words used to make the question and those used to provide the answer are Right There in the same sentence.

A text implicit QAR is defined as having a response in the text, but unlike the text explicit QAR, the words used to form the question and those used to provide the answer range across sentences, paragraphs, or pages. The mnemonic, "Think and Search" is used with children, to underline the strategy that they must Think and Search across sentences, paragraphs, and pages for the appropriate response information. An example of a Think and Search QAR is depicted in passage (5) and question (6):

(5) Albert was afraid Susan would beat him in the tennis match.

The night before the match, Albert broke both of Susan's racquets.

- (6) Why did Albert break both of Susan's racquets? (He was afraid Susan would beat him)

As indicated, information from both sentences in the text would be necessary to form both the question and the response.

A script implicit QAR is defined as one in which students would find the information appropriate for the response only in their knowledge base. The mnemonic suggested for remembering a script implicit QAR is "On My Own," where students would be asked to think, "The story won't be much help to me on this question. I'll have to think of the answer On My Own." A script implicit QAR for passage (5) is:

- (7) Why was Albert afraid Susan would beat him? (He knew she had been practicing; he was afraid the other children might laugh at him, etc.)

The Task, Evaluation, and Feedback

As a result of the QAR instruction, students should be able to identify a QAR, select the appropriate strategy for locating the response information, and provide an adequate response. During the instruction, feedback on all three facets is important.

First, students should be able to identify the QAR as belonging to the category predicted by the instructor in creating the question. This will be referred to as a "hit." In question (7), for example, to achieve a hit students would be required to identify the QAR as belonging to the "On My Own" category.

Second, students should be able to select the strategy they had indicated they would use in their QAR identification irrespective of the teacher's predictions. This is called a "match." In question (7), to

achieve a match, students who had identified the QAR as On My Own would have to provide an answer based on their own background knowledge.

As illustrated in text (8) and question (9), it is possible to identify the QAR incorrectly, yet still achieve a match:

(8) Ralph sat in the old rocking chair. He rocked harder and harder.

Suddenly he was sitting on the floor.

(9) Why was Ralph sitting on the floor? (He rocked so hard that the chair tipped over.)

The appropriate QAR represented by question (9) is On My Own. One infers that rocking very hard may make a rocking chair tip over. However, a student who identifies the QAR as belonging to the Think and Search category (incorrectly) and responds with "he rocked harder and harder" (only part of the answer) would achieve a match since the response is from the text, and in addition, the information used to create the question and that used to form the answer was located across the second and third sentences. Thus, although the student's QAR identification (hit) was incorrect and the response incomplete, a match was nonetheless achieved. Since the student did use the strategy indicated.

Third, students should provide a complete and accurate response. The feedback in this area should be in terms of the best possible answer. In question (9), the optimal response would indicate that the chair had fallen over due to excessive rocking. The response, "he rocked harder and harder," while not incorrect, is incomplete. Feedback in this example should consist of identifying the best possible response and discussing the QAR that represents this response.

The following student response format is easy for the student to use and helpful to the teacher in evaluating the students' work. It is important to stress that this format should only be used until the student appears to understand the use of the three question-answering strategies. It is not the task that is important, rather the ability to provide the best possible responses to the questions.

(10) Why was Albert afraid Susan would beat him?

Right There _____

Think & Search _____

On My Own _____

Students should circle the correct QAR, then write their response on the line following the circled words. To achieve a hit, students select the QAR category predicted by the teacher when the question was constructed (e.g., On My Own in example (10)). To achieve a match, students provide an answer from the information source indicated in their QAR identification (e.g., an On My Own identification and a response from their own knowledge base). A correct response would be determined by its quality in terms of accuracy and completeness, independent of students' success in terms of a hit or match. Thus, for each question, three different responses--hit, match, and response quality--are evaluated.

Implementing the QAR Program

The program was developed using four principles of instruction:

- (a) the importance of immediate feedback, (b) the utility of building from shorter to longer texts, (c) the importance of gradually building independence by guiding students from group to independent activity, and (d) the need for transition from the easier task of recognizing a response

to the more difficult task of generating a response. Thus, each day students would work with increasing independence on longer passages, with variations in tasks from recognizing a QAR when the answer was provided to generating their own answers once they had independently identified the QAR. At each phase, students received immediate feedback on the three facets of their performance: hits, matches, and response quality.

Four instructional sessions were used, each approximately 45 minutes in length making up the "intensive training" phase of the program. Each of the four sessions will be described individually, with reference to the corresponding materials located in Appendices A through E. It is important to note that these four lessons are only suggestions. Individual differences between classes may require adjustment on the part of the teacher. Therefore, the lessons can only serve as a framework or guideline for implementing the program into the classroom. The teachers' ideas and adaptations to these ideas are necessary in order to make the program a success.

Lesson 1. The first lesson introduces the QAR concept and terminology to the students. Student handbooks, as modeled in Appendix B, consist of six brief passages with various question-answering activities. These activities gradually increase in the demands or requirements they make of students. The first two passages are two sentences in length and have one question from each QAR category, an appropriate answer provided for each question, and the correct QAR identified. Students are guided through these two passages using group discussion format. The remaining four passages increase in length and in task difficulty, which will be described in detail below. The final goal of this lesson is to train students to

be able to read a five-sentence passage, identify five corresponding QARs, and provide responses for each. Appendix A contains a series of overhead transparency masters for the first lesson.

In this first lesson, teachers could work with students in a group, first introducing the QAR concept and terminology using Transparencies 1 and 2 from Appendix A. The following represents a prototypical interchange between a teacher and her class during the introduction of the QAR concept:

Teacher (referring to Transparency 1): We will be talking today about different kinds of questions and the best way to answer these questions. Many of the questions you are asked by me, in your workbooks, or in your other books ask for information you could find pretty easily in the book. Other times you won't find an answer there. We will be describing three kinds of questions (refers to overhead): Right There, Think and Search, and On My Own. Each question type can be figured out by deciding where you got the information to answer it. We call this a Question-Answer Relationship, or a QAR for short. (Referring to Transparency 2) Read about a Right There question while Amy reads aloud for us. Ralph, can you tell us how we would have a Right There QAR?

Ralph: It has an answer in the book.

Teacher: That's true, but only part of it. The answer is in the story, and the words used to make up the question and the words you use in your answer are right there in the same sentence.

The teacher could proceed as modeled through the other QARs, first stressing the distinction between text-based and knowledge-based responses;

then stressing the distinction between the two text-based strategies: a Right There QAR where information for both the question and the response can be found within a single sentence, and a Think and Search QAR which requires the integration of information across at least two sentences.

The student's handbook for use throughout Lesson 1 is found in Appendix B. Following a general introductory discussion, the teacher could continue working orally with the class through the first two passages in their students' handbooks using Transparencies 3 and 4 (titled "Albert" and "Irma"). The third passage in the students' handbook, "Robbi's Scarf," could be read to the students while Transparency 5 is presented. The task that follows this passage represents the first generation task. Three questions, one from each category, follow the passage with the three QARs listed beneath each question. Students could be asked to read the question independently and identify the correct QAR by circling the appropriate words. The QAR identifications could then be discussed as a group. The fourth passage in the students' handbook, "Ralph's Rocker," is critical in that it introduces the most demanding task and the one that is used throughout the remainder of the program. In this task, students are asked to identify the QAR as well as to provide the appropriate response information which would reflect use of the QAR strategy. This is modeled on both Transparencies 6 - 8 as well as in Appendix B. This format makes it easier for the teacher to provide feedback on hits, matches, and responses, and allows students to see these three areas more readily.

In the final two passages of Lesson 1, students practice and reinforce the concept of QARs in terms of the task to be used throughout the remainder of the program. Students could be instructed to (a) read the

passage, (b) read each question, (c) locate response information to support their QAR category identification, (d) circle the QAR classification, and (e) write the answer in the blank next to the circled words. A follow-up discussion should include feedback about the students' responses, using Transparencies 7 and 8 as a basis for discussion.

Lesson 2. The second lesson, modeled in Appendix C, introduces slightly longer passages with up to five questions per passage. The five questions include at least one from each QAR category. The lesson could begin with a review using Transparencies 1 and 2. Students could then work through the first passage as a group, then continue independently through the second passage. When all or most of the students have completed the second passage, feedback can be given concerning the correct hits, matches, and response quality. The lesson could proceed in this manner, working independently and correcting as a group through the remainder of this lesson.

Throughout the implementation of this program it is important for the teacher to develop and maintain an attitude accepting diverse response information. That is, the key to accuracy in this entire instructional program should be that of providing a reasonable response, one that can be justified based on the students' own knowledge as well as what they have read, not only a "right answer." It is important to stress both the students' need for an appropriate response as well as their ability to identify the question-answering strategy they used. The teacher should indicate that it is possible to identify a strategy correctly but still have an incorrect answer, and that it is possible to provide a correct response without an awareness of the strategy used. Thus it is important

to explain why an answer is acceptable on the grounds of both response accuracy and strategy identification, and to recognize that more than one combination may be appropriate.

Lesson 3. The third lesson, modeled in Appendix D, provides practice on the QAR task using one longer passage on a single topic. The passage is divided into four sections with two QARs from each category following each section. This lesson could consist of a brief review, independent work on the first section followed by a group discussion, and independent work to complete the last three sections without interruption. During this last independent activity, the teacher could provide feedback on an individual basis.

Lesson 4. The last lesson involves work with material typically found in classrooms (e.g., a basal story, a social studies or science chapter). In this lesson, students would receive the longer passage as a single unit accompanied by six questions from each QAR category. Recommended are passages from 600-800 words in length as modeled by those in Appendix E. Students would read these texts and respond to the post-reading comprehension questions by identifying the QAR and providing the answer next to the QAR identification. As usual, the format would be the same as that in the previous lessons.

Maintenance Activities

Depending upon the students' performance levels on the QAR task, the training program may be supplemented with systematic instruction or by inclusion of QARs as part of content-area reading. In testing this program with fourth grade students, a once a week "maintenance" lesson was found to be effective. These maintenance passages were relatively brief, 150-word

passages with two questions from each QAR category per passage. The review or maintenance lesson consisted of (a) a review of the three categories, (b) silent reading of the passage and response to the QAR task in the format suggested during the formal training phase, and (c) group correction and discussion of accuracy of response and strategy identification.

Additional activities could occur during content area work in areas such as social studies, science, or health, as well as during the developmental reading program. As children respond to naturally occurring questions, QAR identifications could be made and alternative strategies and responses considered. A practice activity in the form of a game was developed by participating teachers in the instructional study (Raphael & Wonnacott, 1981). The activity involves student "lawyers" who state the type of QAR represented by a given question and text, and defend their reasoning by explaining the source of the most appropriate response. The remaining students are given an opportunity to raise objections and present a defense. The lawyer then responds with his counter-defense. The particular value of this activity is the fact that it requires students to verbalize their thought processes in identifying QARs, serving as both practice and as a means for diagnosing any misunderstandings. Rewards for "winning a case" could take forms from awarding a sticker to allowing the winner to "try" another "case."

Conclusion

QARs have implicitly been a part of educational activity throughout the history of instruction. The value of this program lies not in its presentation of a novel phenomenon, but in its very lack of novelty. An instructor should not be surprised by the QAR concept, but should instead

experience a comfortable feeling of recognition. This program could easily merge with current instructional practice. The goal of this article was to provide the reader with an appropriate and systematic means of approaching question-answering as a part of the instructional program, making explicit an activity that remains implicit, and sometimes undiscovered, for many students.

The research investigating the effect of this instructional program in improving students' performance on post-reading comprehension questions indicates that the level of performance does increase. Why this occurs is open to speculation. Perhaps by heightening students' knowledge or awareness of different questioning strategies, they are provided with specific techniques for responding to these questions. Thus equipped, they may then search for appropriate response information. It may also be the case that students were not aware of how useful a text can be when responding to the questions; that once a passage is read, students assume that the information presented in the passage should be part of their knowledge base and therefore do not refer to the text when it would be appropriate to do so. Or alternatively, students may feel that only text-based information is appropriate, thus ignoring a rich source of information--their own background knowledge. As a relatively skilled sixth grade reader explained, "I wish someone had told me about QARs before. I have a lot of information in my head--I just never knew that I was supposed to use it!"

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APPENDIX A
Transparency Masters

QUESTION - ANSWER RELATIONSHIPS

THREE KINDS:

- (1) RIGHT THERE
- (2) THINK AND SEARCH
- (3) ON MY OWN

HOW DO I KNOW WHICH IS WHICH?

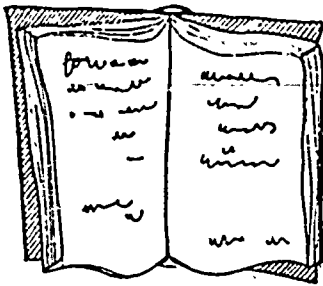
It depends on where the answer
can be found!

Three Kinds of Questions

Where is the answer found?

Type 1

RIGHT THERE



The answer is in the story, easy to find. The words used to make the question and the words that make the answer are **RIGHT THERE**, in the same sentence.

Type 2

THINK AND SEARCH



The answer is in the story, but a little harder to find. You would never find the words in the question and words in the answer in the same sentence, but would have to **THINK AND SEARCH** for the answer.

Type 3

ON MY OWN



The answer won't be told by words in the story. You must find the answer in your head. Think: "I have to answer this question **ON MY OWN**, the story won't be much help.

PASSAGE 1: "Albert"

Albert was afraid that Susan would beat him in the tennis match. The night before the match, Albert broke both of Susan's racquets.

RIGHT THERE

When did Albert break both of Susan's racquets?
(the night before the match)

THINK & SEARCH

Why did Albert break both of Susan's racquets?
(he was afraid that Susan would beat him)

ON MY OWN

Why was Albert afraid that Susan would beat him?
(he knew she had practiced more)
(the other students might laugh)

PASSAGE 2: "Irma"

Irma took a book back to the library today. Unfortunately, it was closed.

RIGHT THERE

Who took a book back to the library?
(Irma)

THINK & SEARCH

What was the reason she could not return the book?
(library closed)

ON MY OWN

Why was the library closed?
(holiday)
(weekend)
(it was evening)

PASSAGE 3: "Robbi's Scarf"

Robbi wore a scarf to school today. It was bright red and she was proud of it.

What color was Robbi's scarf? (RED)

RIGHT THERE
THINK & SEARCH
ON MY OWN

What did Robbi wear to school today? (A SCARF)

RIGHT THERE
THINK & SEARCH
ON MY OWN

What was the weather like? (COLD, STORMY)

RIGHT THERE
THINK & SEARCH
ON MY OWN

PASSAGE 4: "Ralph's Rocker"

Ralph sat in the old rocking chair. He rocked harder and harder. Suddenly he found himself sitting on the floor!

How come Ralph ended up sitting on the floor?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

What kind of chair did Ralph sit in?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

What did Ralph do while sitting in the chair?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

Passage 5: "Dennis and Larry"

Dennis and Larry had worked hard all day raking up leaves. They came inside and turned on the radio. The weather report came on and announced that strong winds would blow all night. Both boys were very upset!

1. At what had Dennis and Larry worked all day?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

2. Why did the boys become upset?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

3. What kind of winds would blow all night?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

4. Who turned on the radio?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

Passage 6: "Lighting a Match"

When lighting a match, it is important to follow these steps carefully. First tear one match out of the matchbook. Second, close the matchbook cover. Third, strike the match against the rough strip on the outside of the matchbook. Finally, after the match has been used, blow it out carefully, and be sure it is cool before you throw it away.

1. What are the first two steps to correctly light and use a match?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

2. Why should you be sure the match is cool before you throw it away?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

3. What should you do after a match has been used and is still burning?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

4. Why should you close the cover before striking the match?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

5. What do you strike the match against to light it?

RIGHT THERE _____

THINK & SEARCH _____

ON MY OWN _____

APPENDIX B

Lesson 1: Student Handbook

To instructor: These materials represent all those necessary for the first session. Prior to using the first handbook, you will introduce the three QAR categories using Transparencies 1 and 2 (see Appendix A). The remainder of the transparencies correspond to the examples in this student handbook. When preparing student handbooks from the materials provided, double space the text and alter the explanation and speed of the lesson to fit the level of ability of your students. While the answers are provided in this manual, they should not appear on the students' copies.

Passage 1

LESSON 1

"Albert"

Albert was afraid that Susan would beat him in the tennis match. So the night before the match, Albert broke both of Susan's racquets.

The first type of QAR we talked about was the kind where the answer was RIGHT THERE in the story, and that words from both the question and the answer could be found in the same sentence. Here is an example of a RIGHT THERE Question:

1. When did Albert break both of Susan's racquets?
(the night before the match)

Notice that the answer, "the night before the match" is from the same sentence that the words in the question can be found.

An example of the second QAR, where the answer is in the story but you would have to THINK & SEARCH for it is:

2. Why did Albert break both of Susan's racquets?
(Albert was afraid that Susan would beat him in the tennis match)

Notice that the answer, "Albert was afraid that Susan would beat him in the tennis match" is found in the story. You had to go to the first sentence to find it. The question, though, was formed from words in the second sentence.

An example of the third QAR, where the answer is not found in the story and you would have to be able to figure it out ON MY OWN, is:

3. Why was Albert afraid that Susan would beat him?

It does not tell you the answer in the story, but you could probably figure it out pretty easily. Maybe he was afraid other children would laugh at him or maybe he didn't want a girl to win. As you can see, there is often more than one correct answer to this type of QAR.

Passage 2

32

Here is the second example:

"Irma"

Irma took a book back to the library today. Unfortunately, it was closed.

RIGHT THERE

1. Who took a book back to the library?
(Irma)

THINK & SEARCH

2. What was the reason she could not return the book?
(library closed)

ON MY OWN

3. Why was the library closed?
(holiday)
(weekend)
(it was evening)

Passage 3

Now look at the third example and see if you can tell which kind of QAR each one is. Circle your choice:

"Robbi's Scarf"

Robbi wore a scarf to school today. It was bright red and she was proud of it.

1. What color was Robbi's scarf?

RIGHT THERE
THINK & SEARCH
ON MY OWN

2. What did Robbi wear to school today?

RIGHT THERE
THINK & SEARCH
ON MY OWN

3. What was the weather like?

RIGHT THERE
THINK & SEARCH
ON MY OWN

Read example 4 and then read each question. Circle the kind of QAR you think it is and write an answer on the blank next to the one you circled. Then we will talk about our answers together.

"Ralph's Rocker"

Ralph sat in the old rocking chair. He rocked harder and harder. Suddenly he found himself sitting on the floor!

1. How come Ralph ended up sitting on the floor?
 RIGHT THERE _____
 THINK & SEARCH _____
 ON MY OWN (the rocking chair tipped over) _____
2. What kind of chair did Ralph sit in?
 RIGHT THERE (old rocking chair) _____
 THINK & SEARCH _____
 ON MY OWN _____
3. What did Ralph do while sitting in the chair?
 RIGHT THERE _____
 THINK & SEARCH (he rocked harder and harder) _____
 ON MY OWN _____

Passage 5

For example 5 you will find four questions. Circle the type of QAR you think each one is and then answer it on the blank next to the words you have circled. Think carefully about where the answer came from.

"Dennis and Larry"

Dennis and Larry had worked hard all day raking up leaves. They came inside and turned on the radio. The weather report came on and announced that strong winds would blow all night. Both boys were very upset!

1. At what had Dennis and Larry worked all day?
 RIGHT THERE (raking up leaves) _____
 THINK & SEARCH _____
 ON MY OWN _____
2. Why did the boys become upset?
 RIGHT THERE _____
 THINK & SEARCH _____
 ON MY OWN (the wind would mess up their leaves) _____
3. What kind of winds would blow all night?
 RIGHT THERE (strong winds) _____
 THINK & SEARCH _____
 ON MY OWN _____

4. Who turned on the radio?

RIGHT THERE

THINK & SEARCH (Dennis and Larry)

ON MY OWN

Passage 6

For example 6 there are five questions. Circle the type of QAR you think it is and write an answer on the blank next to the one you circled. Then we will talk about our answers together.

"Lighting a Match"

When lighting a match, it is important to follow these steps carefully. First tear one match out of the matchbook. Second, close the matchbook cover. Third, strike the match against the rough strip on the outside of the matchbook. Finally, after the match has been used, blow it out carefully and be sure it is cool before you throw it away.

1. What are the first two steps to correctly light and use a match?

RIGHT THERE

THINK & SEARCH (tear one match out, close the cover)

ON MY OWN

2. Why should you be sure the match is cool before you throw it away?

RIGHT THERE

THINK & SEARCH

ON MY OWN (you might start a fire)

3. What should you do after a match has been used and is still burning?

RIGHT THERE (blow it out carefully)

THINK & SEARCH

ON MY OWN

4. Why should you close the cover before striking a match?

RIGHT THERE

THINK & SEARCH

ON MY OWN (so all the other matches don't flare up)

5. What do you strike the match against to light it?

RIGHT THERE (the rough strip on the outside of the matchbook)

THINK & SEARCH

ON MY OWN

APPENDIX C

Lesson 2: Student Handbook

To instructor: All the materials required for the second session are provided in this appendix. However, to prepare them for students, the following steps are necessary: (1) double space text, (2) put questions in random order (not in the order of "RIGHT THERE, THINK & SEARCH, ON MY OWN"), (3) put all questions into the format used at the end of Lesson 1 (see page 26).

LESSON 2

Today we are going to practice identifying the different kinds of QAR's and answering the questions. In this section you will find several short passages with questions that follow. For each passage we will first read the story, then circle the words that describe the question, and finally answer the question on the blank next to the circled words.

"Sleeping Animals"

While you are sleeping in your bed at night, animals in fields and forests, in lakes and rivers, are sleeping too. Like you, they must rest.

Some animals sleep on the ground. Some sleep in water. Some sleep in trees. Each one has its own way of making itself comfortable.

If you tried to sleep standing up, you would probably fall down. But a horse can just stand on its four legs, relax its muscles, and go to sleep.

When a horse is tired, it may lie down and rest on its belly or on its side. But much of the time, a horse sleeps standing up. It just closes its eyes and dreams of whatever it is that horses dream about.

RIGHT THERE

1. What would happen if you tried to sleep standing up?
(you would probably fall down)
2. What animal can stand on its four legs, relax, and go to sleep?
(a horse)

THINK & SEARCH

3. Name three places that animals sleep.
(on the ground, in water, in trees)

ON MY OWN

4. What might a horse dream about?
(eating oats)

"Elephants"

Elephants live together in large herds. During the night some of the elephants sleep standing up. Other elephants, usually the young ones, sleep lying on their broad sides. But there are always a few elephants up and awake. They keep guard for the elephants that are sleeping.

Any elephant that lies down to sleep has a difficult job ahead when it wakes up. An elephant must work hard to get its enormous body off the ground. It has to rock from side to side until it is able to roll up onto its feet. No wonder some elephants sleep standing up.

RIGHT THERE

1. Which elephants usually sleep lying on their broad sides?
(the young ones)

THINK & SEARCH

2. Why are there always a few elephants up and awake?
(they keep guard for the elephants that are sleeping)
3. What hard work must an elephant do to get its enormous body off the ground?
(it has to rock from side to side until it is able to roll up onto its feet)

ON MY OWN

4. What enemies might attack the sleeping elephants?
(a tiger or a lion)

"Safety"

Every year hundreds and hundreds of boys and girls get hurt at home, on the streets, or at school where they work and play. You should learn how to play and work carefully so that you will not have an accident. Read this selection, remember to do what you have learned, and you may be able to keep yourself or someone else from getting hurt.

Scissors, knives, and other sharp things often cause very bad cuts. Running with scissors in your hand is very dangerous. If you fall, you may get hurt. When you are cutting with a knife, cut away from your hand, never toward your hand. Bonfires are lots of fun to watch. But they are often dangerous too. They can blaze up and set people's clothes on fire. You should never build bonfires unless some grown-up

person is with you. If your clothes ever should catch fire, do not run. Running will only make the fire burn faster. Cover yourself with a blanket or coat. Or lie down and roll over slowly on the ground.

RIGHT THERE

1. Name two sharp things that often cause very bad cuts.
(scissors, knives)

THINK & SEARCH

2. Why could a bonfire be dangerous?
(they can blaze up and set people's clothes on fire)
3. Why should you not run if your clothes catch fire?
(running will only make the fire burn faster)

ON MY OWN

4. Why have a grown-up around if you're building a bonfire?
(they know the safety rules)

"Bicycle Safety"

Many accidents are caused by people who are careless on bicycles. If you ride in the street, always keep to the right side near the curb. It is never safe to hang on the back of a truck while you are riding. Riding on the sidewalk is dangerous for the people walking there. Always have a bell so that you can warn people quickly. It is safest not to ride a bicycle at night. But if you have to ride at night, be sure to have a light on the front of your bicycle that is in good working order. On the back, have a tail light or a reflector.

RIGHT THERE

1. When riding on the street, where should you ride the bike?
(always keep to the right side near the curb)
2. Why have a bell on the bike?
(so that you can warn people quickly)

ON MY OWN

3. Why isn't it safe to ride a bicycle at night?
(drivers can't see you very well)
4. What kinds of accidents may be caused by people on bicycles?
(if a car swerves to miss a bicycle it may hit another car)

"How Fish Get Food"

When we want to catch seafood, we must use different kinds of tools and traps to catch it. But animals that live in the water must catch their food without bait, nets, harpoons, or fish hooks.

How does a fish catch its dinner? A fish is able to get food by using its mouth as hunting equipment.

Different kinds of fish have their teeth in many different places in their mouths. Some have teeth on the roofs of their mouths, some on their tongues, and some even in their throats.

If you were to open a herring's mouth and look along the gill slits, you would see two rows of little rods set close together called gill rakes. They look like tiny rakes. Sea water passes through a herring's mouth and out through the gills. If there are any tiny plants and animals in the water, the gill rakes act like built-in strainers and hold them back for the fish to swallow.

RIGHT THERE

1. What must we do when we want to catch seafood?
(we must use different kinds of tools and traps)
2. How is a fish able to get food?
(by using its mouth as hunting equipment)
3. What do gill rakes look like?
(two rows of little rods set close together)

THINK & SEARCH

4. In a fish's mouth, where might its teeth be found?
(on the roofs of their mouths, on their tongues, in their throats)

ON MY OWN

5. Why might fish have different kinds of teeth?
(because they all eat different kinds of food)

"Swordfish"

There are some fish with fancier equipment than gill rakes or pointed teeth. One fish has a sword. This really is just the fish's upper jaw which has grown out into a sharp bony point.

With its sword, the swordfish can go after a fish as big as a tuna. It can stab a hole in the tuna and kill it. If the swordfish gets into a school of cod or herring, it will slash about with its sword. Then it will settle down to make a meal of the stunned or wounded fish.

RIGHT THERE

1. How big a fish can a swordfish go after?
(as big as a tuna)
2. What does a swordfish do if it gets into a school of cod or herring?
(slash about with its sword)

THINK & SEARCH

3. What is the fish's sword?
(the fish's upper jaw which has grown out into a sharp bony point)
4. Name two fish a swordfish could eat.
(cod or herring)

ON MY OWN

5. Where would you find swordfish living?
(in the ocean)

APPENDIX D

Lesson 3: Student Handbook

To instructor: The story "Australia's Aborigines" is to be used for this session. Note that it has been divided into four sections, with six questions (two from each QAR category) per section. In preparing the students' handbooks; (1) double space text, (2) put questions within each section in random order, and (3) put questions into QAR format (see page 26).

"Australia's Aborigines"

Part of the country of Australia is very dry, with nothing but sand and rocks. People there live as men used to live thousands of years ago. These people are called Aborigines.

The Australian Aborigines' way of life sounds very strange to us. They don't raise animals or grow crops for food. They have to hunt animals and eat whatever they find growing.

They never stay in one place very long, because they must always look for food and water. So they never build houses. Most of the time, Aborigines wear no clothes. If it's very cold, they wrap animal skins around themselves.

RIGHT THERE

1. Most of the time, what do Aborigines wear?
(no clothes)
2. When do they wrap animal skins around themselves?
(if it's very cold)

THINK & SEARCH

3. Why don't the Aborigines build houses?
(because they must always look for food and water)
4. Why do Aborigines have to hunt animals and eat whatever they find?
(they don't raise animals or grow crops for food)

ON MY OWN

5. Why don't the Aborigines raise animals and crops?
(the land is barren and dry and there is very little water)
6. Why do the Aborigines still live as they did thousands of years ago?
(tradition; they have not seen any other way to live)

"Making Camp"

Aborigines travel together in small groups. Whenever they find a place where there is water or a few trees, they set up a camp. But they don't have tents. Each family makes a screen of tree branches or bark. This protects them from the wind and bad weather.

As soon as the screens are made, the women start to look for food. They dig roots out of the ground with pointed sticks. They pick berries and grass seeds. If a woman is very lucky, she finds a wild bee's nest. Then everyone has honey--a wonderful treat.

RIGHT THERE

1. Where is camp set up?
(a place where there is water or a few trees)
2. How do they dig roots out of the ground?
(with pointed sticks)

THINK & SEARCH

3. Why are they lucky if a woman finds a wild bee's nest?
(then everyone has honey--a wonderful treat)
4. What protects them from wind and bad weather?
(a screen of tree branches or bark)

ON MY OWN

5. Why do they travel in small groups instead of large groups?
(it is hard to find enough food and water for a large group)
6. Why don't the Aborigines have tents?
(there aren't stores around to buy them from)

"Hunting"

While the women dig roots, the men go hunting. They don't have guns or even bows and arrows. They have several kinds of clubs and wooden spears. You may have seen one kind of Aborigine club--the curved boomerang that always comes back to the place from which it is thrown.

It is very exciting when the men find the tracks of an animal. They especially like to hunt kangaroos. If the hunters come back with a kangaroo, everyone is happy. The women and children run to meet the hunters. Now there will be enough food for everyone.

RIGHT THERE

1. What does the boomerang always do?
(comes back to the place from which it is thrown)
2. What do the men do while the women dig roots?
(go hunting)

THINK & SEARCH

3. Why is everyone happy if the hunters come back with a kangaroo?
(now there will be enough food for everyone)
4. What do the men use to hunt with?
(several kinds of clubs and wooden spears)

ON MY OWN

5. Why don't Aborigines have guns or bows and arrows?
(they do not have factories or places to make them)
6. Why do the men especially like to hunt kangaroos?
(if they kill one it will feed a lot of people)

"The Feast"

While the women roast the kangaroo over an open fire, everyone else gathers around the hunters to hear their stories. The men tell about chasing the animal and the adventures they have had during their last hunting trip.

By the time the kangaroo is cooked, everyone is very hungry. Aborigines often do not have enough food. So a feast like this is a wonderful thing.

After the feast, they celebrate with a dance called the corroboree. The corroboree dancers paint their bodies red and white. They put on high, pointed hats made of tree bark. Some of the other men hit boomerangs together. This makes a sound like drums. It is the music for the dance. Everyone sings along with the dancing and the pounding. Then the dancers act out the story of the hunt.

The Aborigines' life is not an easy one. They have to work very hard to stay alive. This is the way that everyone lived thousands of years ago.

RIGHT THERE

1. What dance do they celebrate with after the feast?
(the corroboree)
2. What are the high pointed hats made of?
(tree bark)

THINK & SEARCH

3. What kind of stories are told at the open fire?
(about chasing the animal and the adventures they have had during their last hunting trip)
4. How do they make music for their dance?
(hit boomerangs together, this makes a sound like drums)

ON MY OWN

5. Why do the Aborigines have to work so hard to stay alive?
(it is hard to find enough food and water because the country where they live is dry, sandy and rocky)
6. How do the Aborigines learn how to hunt kangaroos?
(from the men in the group who have been hunting a long time)

APPENDIX E

Basal-Type Passages

To instructor: The two basal-type passages in this section are followed by eighteen questions (six of each type of QAR). The format should be the same as that used in lessons two and three: (1) double space text, (2) put questions in random order, and (3) put questions into QAR format (see page 26).

"Dinosaurs"

Dinosaurs lived long, long ago. They were the strangest animals that ever lived on this earth. At one time they ruled the world, but now they are all dead. Sometimes in cartoons you see pictures of dinosaurs with men. That is all make believe. No human being ever saw a dinosaur alive. Most people are sorry about that. We would all like to see a living dinosaur. A zoo of dinosaurs would be the most wonderful zoo in the world. But dinosaurs are long gone. Scientists say the last ones died sixty million years ago.

How do we know there were dinosaurs? How do we know what they were like? We learn about dinosaurs by studying their fossils. When dinosaurs died, their bodies sank down into the mud or sand. Many years passed. Slowly, some of their bones and teeth turned to stone. Sometimes the eggs of dinosaurs turned to stone, too. That is one way a fossil was made.

Another kind of fossil was made by the marks the dinosaurs' feet left in soft mud. Sometimes this mud dried up and became stone. The footprint in stone is a fossil. Scientists study fossils. They can tell how big dinosaurs were by the size of their bones and by the size of their footprints. They can figure out what dinosaurs ate by the kind of teeth they had. Some ate hard plants and some ate soft plants. Some ate small animals and insects. Some ate other dinosaurs! When we study dinosaur bones and fit them together, we can guess what they looked like.

There were two main groups of dinosaurs. The first group was plant-eaters and the second group was meat-eaters...The Brontosaurus, the Stegosaurus, and the Brachiosaurus were all plant-eaters. The Brontosaurus was one of the largest dinosaurs ever to walk the earth. It was as long as five cars. It weighed about 30 tons. This is heavier than ten elephants put together. It was so heavy that every step it took must have sounded like thunder. In fact, the word Brontosaurus means "thunder lizard."

The Stegosaurus was another plant-eater. This dinosaur had armor to protect it. Stegosaurus means "covered lizard." Its back was covered with large pointed plates. On its tail were four sharp spikes.

A third giant plant-eater was the Brachiosaurus. It was the tallest of the dinosaurs. If there had been a three-story building around when this dinosaur lived, it could have peeked down the chimney without even stretching. The Brachiosaurus was one of the heaviest land animals that ever lived. It weighed about eight tons. This is more than three thousand boys and girls put together.

A second group of dinosaurs was the meat-eaters. These dinosaurs included Allosaurus and Tyrannosaurus Rex. Allosaurus wasn't as big as many of the plant-eating dinosaurs, but it was fierce and quick. It had strong arms and sharp claws. Its mouth was filled with sharp teeth.

Tyrannosaurus Rex was the largest of the meat-eating dinosaurs. It was 50 feet long. Its head was as high as three tall men standing one on top of the other. Its teeth were six inches long. They had sharp, tearing edges. Tyrannosaurus Rex was one of the last of all the giant meat-eating dinosaurs.

People often ask why all the dinosaurs disappeared from the earth. We have some ideas. Maybe the climate became too cold. Maybe the dinosaurs ran out of food. Perhaps some new enemies came along. Any of these things could have made life hard for the dinosaurs. Finally, all the dinosaurs died after ruling the world for millions of years.

Dinosaurs were the biggest, the most fantastic, and the most terrible creatures that ever walked the earth. There are many things we don't know about dinosaurs. We don't know all the places that dinosaurs lived. We don't know how long a dinosaur lived. Did they live a hundred years? Did the dinosaurs make any noise? Did they roar like alligators? Squeak like lizards? Scream? Roar? Were all the dinosaurs born from eggs? These are some of the questions scientists ask. Maybe we will never know the answers to some of them. Maybe some of our questions will be answered tomorrow or next year. Maybe you will help find some of the answers.

RIGHT THERE

1. How do we learn about dinosaurs?
(by studying their fossils)
2. How can they figure out what dinosaurs ate?
(by the kind of teeth that the dinosaurs had)
3. What does the word Brontosaurus mean?
(thunder lizard)
4. How do they (scientists) know how big dinosaurs were?
(by the size of their bones; by their footprints)
5. Which dinosaur was one of the heaviest land animals that ever lived?
(the Brachiosaurus)
6. What dinosaur was the largest of the meat-eating dinosaurs?
(Tyrannosaurus Rex)

THINK & SEARCH

7. What is one way a fossil is made?
(some of their bones and teeth turned to stone; footprints in mud drying up and turning to stone)
8. What is something that a dinosaur would eat?
(hard plants, soft plants, small animals, insects, other dinosaurs)
9. What are the two main groups of dinosaurs?
(plant-eaters and meat-eaters)
10. Why is the Stegosaurus called "covered lizard"?
(its back is covered with long pointed plates)
11. What made the Allosaurus fierce?
(it had strong arms and sharp claws)
12. Why did the dinosaurs disappear from the earth?
(climate became too cold; ran out of food; new enemies)

ON MY OWN

13. Why were dinosaurs such strange and unusual animals?
(they were so much bigger than any other animal)
14. Why would a cold climate make life hard for the dinosaurs?
(destroy the kind of food it eats; reptiles can't live in cold climates)
15. Where would you go to see what a dinosaur looked like?
(museum; Dinosaur Land)
16. Where would you look for dinosaur fossils?
(in mud and sand; in rocks)
17. What would happen if dinosaurs lived today?
(much destruction; buildings harmed)
18. What were some of the enemies of the dinosaurs?
(other dinosaurs; weather)

"All About Dogs"

A long, long time ago, in the days when people lived outdoors or in caves, there were no tame dogs. All the animals of the earth were wild. One of these wild animals was the wolf. Wolves roamed through the fields and forests. They were very shy and suspicious of humans. Yet from these wild wolves, and maybe from some jackals and foxes too, have come all the different dogs that are pets today.

Like their ancestors, dogs have a very strong sense of territory. A wolf's natural territory is the den where he lives and the land around his den where he hunts for food. A dog's natural territory is his house and yard. That's why even a friendly dog will bark and maybe even bite when a stranger comes into its yard. Dogs who are defending their territory are often very brave. Dogs who invade another territory usually feel scared.

Wolves, and dogs, have a very strong sense of loyalty, of helping each other out. Wolves live in small groups called packs. Each wolf in a pack cares very much about every other wolf in his pack. And every pack has a leader. All the wolves are especially loyal to him. Many people feel that a dog treats the people he lives with as though they were his pack. That is why most dogs are so loyal to their human families. And many a dog is especially devoted to one special person. That human being is the dog's special pack-leader.

Though there are many different kinds of dogs, they all have certain traits in common. Dogs do not see very well. They see things up close, but anything far away is often just a blur to them. Many scientists think that dogs are also color-blind. They can't see many bright colors as people can. To them, it is all black, white, and shades of gray.

A dog's sense of hearing is much keener. Dogs can hear things that are happening far away. They can hear very, very soft sounds too. Dogs are also able to hear very high and very low sounds -- sounds that people can not pick up. Their sense of hearing is one thing that makes them such good watchdogs.

But a dog's best sense by far is his sense of smell. Some scientists say that many dogs can smell a hundred times better than people can. Others say that they can smell many thousands times better! A dog can read all sorts of messages with his nose. He can tell if another dog or some other animal has come his way. He can tell if it is a friend or an enemy. He can tell if an animal came by recently or a long time ago. Dogs can smell things that are happening a long way away too. Some dogs can even smell what is happening two miles away, if the wind is in the right direction.

From the early days, dogs have been trained to do more and more jobs. Today there are hunting dogs, herding dogs, watch dogs, war dogs, police dogs, and rescue dogs to name just a few. For example, dogs are often used to help find missing people like lost children or escaped criminals. Some dogs have sniffed a missing person's trail for many miles.

Dogs show their feelings in all sorts of ways. They bark in warning or yelp in excitement. They growl in anger and howl with pain. They whine with fear or frustration. But most of the time a dog shows how he is feeling in a silent way. He talks with his body. A dog who wants to be friends always holds his tail high and wags it hard. Sometimes he half opens his mouth and pulls his lips back. He almost looks

as if he is grinning. Often he will bound forward and then run a few feet away.

When a dog has been punished he acts different. He will not look at you for a long time; his eyes go everywhere else instead. His ears are flattened against the side of his head. His tail is tucked tight between his legs.

A dog shows he is angry in many different ways. He often stares or glares. His mouth is usually open showing his sharp teeth. His ears are held up or bent forward. All four legs are stiff, almost as if he is walking on tiptoe.

There are many different kinds of dogs. But almost all dogs have one thing in common. They dearly love the people with whom they live. No wonder the dog is often called "Man's Best Friend."

RIGHT THERE

1. How do dog's who invade another dog's territory usually feel?
(scared)
2. What are the small groups that wolves live in called?
(packs)
3. Though dogs can see things up close, how do things far away look to them?
(just a blur)
4. What makes dogs good watchdogs?
(their sense of hearing)
5. What kind of missing people are dogs often used to find?
(lost children and escaped criminals)
6. What is the dog often called?
(Man's Best Friend)

THINK & SEARCH

7. Why are most dogs so loyal to their human families?
(treat them as though they were his pack)
8. What color is a dog's world?
(black, white, and shades of gray)
9. What kind of messages can a dog read with his nose?
(if another dog or animal has come his way; friend or enemy)

10. What are some of the jobs dogs have been trained to do?
(hunting, herding, watch dogs, war dogs, etc.)
11. What is a way a dog can show how he is feeling?
(bark in warning; yelp in excitement; . . . with his body, etc.)
12. What is one thing all dogs have in common?
(they dearly love the people with whom they live)

ON MY OWN

13. What is a sense of territory?
(knowing what place belongs to you, is where you live)
14. How might wolves show that they care very much about each other?
(defend each other, get food for each other)
15. What are some sounds a dog might hear that people could not hear?
(special whistles, a burglar, someone crying for help from far away)
16. How does a dog know whom to look for when trying to help find missing people?
(he sniffs something that belongs to them to get their scent)
17. For what kind of an act might a dog be punished?
(fighting, biting, chewing up garbage)
18. Name one thing that might make a dog angry.
(someone coming into his yard; being kicked or teased)

APPENDIX F

Maintenance Passages

To instructor: Eight sample maintenance passages are provided in this section. Following each passage are six questions (two from each QAR category). In preparing the passages for student use: (1) double space text, (2) put questions in random order omitting the answers on the student version, and (3) put questions into QAR format (see page 26).

"Dolphins"

Dolphins are mammals that live in the water. They look a little like fish, but they are not fish. Fish breathe in the water, but dolphins can't. A dolphin has to breathe air. That is why a dolphin comes to the top of the water so often. A dolphin usually comes up to the surface of the water every half minute or so. However, they can stay under water for six or seven minutes if they have to. How do they keep from drowning? They hold their breath.

Dolphins are friendly and useful animals. They usually live in a group. This group is called a school. Dolphins eat together in the school, and usually stay in the school when they sleep too. Dolphins help each other in many ways. They help each other when an enemy finds them. The killer whale and the shark are enemies of the dolphin. If an enemy comes close, the dolphins make a circle. Usually an enemy won't try to attack them in such a group. If a dolphin should become injured or sick another dolphin will become its nurse. The nurse will swim around with the sick dolphin. If the sick one falls too deeply asleep, the nurse will give it a gentle push up for a quick breath of air.

Studying dolphins can teach us many things. Dolphins are able to keep away from things in the water no matter how dark or muddy the water is. This is because they have sonar. Sonar is the ability some animals have for using sounds to find their way around. Doctors are interested in dolphin sonar. They hope to make a sonar that will help blind people.

RIGHT THERE

1. Who are the dolphins enemies?
(the killer whale and the shark)
2. What is sonar?
(the ability some animals have for using sound to find their way around)

THINK & SEARCH

3. Why are doctors interested in dolphin sonar?
(they hope to make a sonar that will help blind people)
4. Why does a dolphin have to come to the top of the water so often?
(a dolphin has to breathe air)

ON MY OWN

5. How might a dolphin become injured or sick?
(it might get caught in a net or attacked by a shark)
6. Why would a dolphin need to stay under water six or seven minutes?
(so they can swim down very deep and catch some fish to eat)

"How To Crack A Coconut"

The coconut is the biggest seed in the world. It is also one of the tastiest. Coconuts grow in warm places like Florida and Hawaii on tall palm trees.

This large seed has two shells covering it. One is an outer shell that is brown and hairy. Beneath these two shells you'll find delicious meat.

There are three things you need to do to get to the meat inside. If you shake the coconut, you can hear something sloshing around inside. This is the coconut juice. The first thing to do is to get the juice out. You need to find three little black spots on the bottom of the coconut called the "eyes". Hammer a nail into each of these spots, and then pull the nail out. Set the coconut on a small bowl and let the juice drain out through the holes. Shake it a bit if it's coming slowly.

Second, you would put the coconut in an oven at 350 degrees for about 30 minutes. This makes the shell easier to crack.

Cracking the shell is the third step to getting the meat. After the coconut cools a bit put it on a towel on the floor and hit it as hard as you can with a hammer. Keep pounding until the shell cracks.

When the shell is cracked, you can see the coconut meat. There will be a thin brown skin on the white meat. Peel this off with a vegetable peeler.

You can cut the coconut into little pieces for a chewy snack. You can grate it and sprinkle it on deserts. You can use it in cakes and cookies.

RIGHT THERE

1. What is the biggest seed in the world?
(the coconut)
2. What kind of tree do coconuts grow on?
(tall palm trees)

THINK & SEARCH

3. What are two things you can use coconut in?
(cakes and cookies)
4. Why would you put a coconut in the oven?
(this makes the shell easier to crack)

ON MY OWN

5. Why would you put a coconut on a towel on the floor when you are cracking it?
(so you won't make a big mess in the kitchen)
6. If you don't live in Florida or Hawaii, where would you find a coconut?
(in a grocery store)

"Prairie Dogs"

A small, chatty, and mildly quarrelsome animal is called a prairie dog. He is not a dog at all. In fact, he belongs to the rodent or rat family. But unlike some of the members of his family, he is a rather nice little fellow.

The prairie dog looks a good deal like a rabbit with short ears. He weighs one to three pounds. He wags his tail up and down instead of sideways like a dog does.

Prairie dogs live in large underground holes or burrows called towns. In the great plains of northern Texas, there used to be an underground town that covered an area bigger than the state of Rhode Island. More than 400 million prairie dogs lived there, until the white man came.

Prairie dog towns are divided into neighborhoods. Many clans or families live in each neighborhood. When prairie dogs from the same clan meet they sit on their haunches facing each other. They rub noses, kiss, and place their forepaws on each other's shoulders. They comb each other's fur and pick fleas. They watch the young prairie dogs play. They almost seem to talk. They have special warning cries known only to their fellow dog neighbors.

If a prairie dog of another clan ventures into the neighborhood, the male prairie dogs stand on their hind legs and jump up and down and yip until the outsider withdraws. Then the gossiping and visiting continues. Prairie dogs of the same clan are always going in and out of each others burrows like people do with each other's houses.

RIGHT THERE

1. What animal does the prairie dog look a good deal like?
(a rabbit with short ears)
2. What does a male prairie dog do if a member of another clan ventures into the neighborhood?
(stand on their hind legs and jump up and down and yip until the outsider withdraws)

THINK & SEARCH

3. What family does the prairie dog belong to?
(the rodent or rat family)
4. What does a prairie dog weigh?
(one to three pounds)

ON MY OWN

5. What happened to the underground town where 400 million prairie dogs lived after the white man came?
(they were killed)
6. What would a prairie dog need a special warning cry for?
(to warn the neighborhood that danger is near)

"Scrapers of the Sky"

Very tall buildings, as you know, are called skyscrapers. They were invented by a person in the United States. Most cities around the world now have skyscrapers. In New York City they are especially exciting to see. From a distance the New York City skyscrapers look like fantastic towers, dream buildings, almost unbelievable. The tallest early skyscraper built was the Empire State Building in New York City. It takes a very short time to build a skyscraper. The Empire State Building is more than a quarter of a mile high and yet it took less than one year to build.

A skyscraper begins to rise in the air according to a carefully planned schedule. A very deep and firm foundation must be laid for modern skyscrapers. Building materials must arrive in the order they are to be used. Each steel girder, each sheet of glass, each piece of stone, and each section of pipe is brought to the building site at just the right time. If the wrong piece arrived first, it couldn't be used at once. It would be in the way and would block traffic in the street. So materials arrive as they are needed and are lifted into place at once instead of being piled on the ground to wait their turn.

RIGHT THERE

1. What are very tall buildings called?
(skyscrapers)
2. How long did it take to build the Empire State Building?
(less than one year)

THINK & SEARCH

3. Where were skyscrapers invented?
(by a person in the United States)
4. Why must building materials arrive in the order they are to be used?
(if the wrong piece arrived first, it couldn't be used at once)

ON MY OWN

5. Why do skyscrapers need deep, firm foundations?
(so it won't fall down)
6. Why would we need to build a very tall building?
(so that more people can use less space)

"Seeing Eye Dogs"

For thousands of years dogs have helped people in many ways. One of the most important jobs that dogs can do is guiding people.

A Seeing Eye dog must learn to obey commands. He must also learn to do something much harder than that. He must learn to refuse to carry out a command that might cause harm to his owner. That is why any Seeing Eye dog must be very smart. After he has learned everything he needs to know, the Seeing Eye dog will get a new master--someone who is blind.

The blind master and the dog learn to work together. To do this the master puts a short, U-shaped harness on the dog. He learns to hold the handle of the harness lightly to feel the dog's starts, stops, and turns.

The blind master tells the dog where he wants to go. The master knows the city and directs the dog by commands like, "Right", "Left", and "Forward". At street crossings the dog guides the blind person to the edge of the curb and stops. After the master has found the edge of the curb with one foot he gives the dog a command to go on.

A blind person with a Seeing Eye dog can do a lot of things without help. Besides this, the blind master has a good and faithful friend at all times.

RIGHT THERE

1. What must a Seeing Eye dog learn to do?
(learn to obey commands)
2. What do the blind person and the dog learn to do together?
(they learn to work together)

THINK & SEARCH

3. How does the blind master tell the dog where he wants to go?
(he gives the dog a command to go)
4. What is the U-shaped harness on the dog for?
(he learns to hold the handle of the harness lightly to feel the dog's starts, stops, and turns)

ON MY OWN

5. Where are blind people allowed to take their dogs?
(anywhere)
6. Where do blind people get their Seeing Eye dogs?
(from someone who has trained the Seeing Eye dog)

"The Latest News"

Newspapers are very important. They tell us what's been happening all over the world. Many people work to produce a newspaper. These are the reporters, editors, and delivery people.

Reporters are the people who find out what the news is. They talk to many people and go many places. In order to keep the stories in the newspaper new, reporters rush what they find out back to their newspaper. They use the quickest way they can. Most of the time they use a telephone or a radio. That's why telephones are always ringing in a newspaper office. Reporters are calling in news from all over the world.

When the news gets to the office it is quickly written down. Once it's on paper and has a headline, an editor looks at it to be sure that the story is written well. When this is done, the story is quickly sent to the place where it will be printed on the big machines. These machines keep roaring all night long. This way the newspaper will be ready in the morning.

When all the papers are cut and folded, delivery people rush the piles of papers to the trucks. Dozens of trucks full of newspapers leave the newspaper building in the middle of the night. When they come to a news stand, the drivers throw out a bundle of newspapers. Very

early in the morning the paper boys and girls will come and roll the papers up and put rubber bands around them. They deliver these to all the people on their route.

Soon it will be morning and all over the city people will be reading the latest news.

RIGHT THERE

1. What are reporters?
(people who find out what the news is)
2. What happens to the newspapers after they are cut and folded?
(delivery people rush the piles of papers to the trucks)

THINK & SEARCH

3. Why are newspapers important?
(they tell us what's been happening all over the world)
4. What do reporters use to get the news back to the paper?
(the quickest way they can; a telephone or a radio)

ON MY OWN

5. How is news in the newspaper different than news on television?
(there is more detail in the newspaper)
6. What makes news interesting?
(learning about new events; finding out about people or places)

"Web Weavers"

You have probably run headfirst into a spider web at one time or another. Did you stop to notice how neatly it had been put together? The spider works very carefully, often producing a web as beautiful as it is useful. This is because webs serve two very important purposes for the spider. First, the web is where the spider lives. Second, the web is used to catch insects for food.

Of all the different kinds of spider webs, the orb web is probably the most beautiful. It is called an orb web because the lines of the web go around and around in circles. The owner of an orb web is called an orb weaver. He makes the web from a very strong silk, the finest thread found in nature. It is so strong that if you were to make a rope of it one inch thick, it would be stronger than a one inch thick rope made of iron!

The orb web usually hangs straight up and down. This way an insect flying through the air will run into it and be caught. The circling lines of the web stretch and are very sticky. The flying insect gets stuck by the sticky material. The spider waits in the center or along the side of the web. When an insect gets caught on the sticky lines, the spider moves along one of the crosslines. Since the crosslines are the only parts of the web that aren't sticky the spider will not get trapped.

RIGHT THERE

1. How does the orb web usually hang?
(straight up and down)
2. Which lines of a web stretch and are very sticky?
(the circling lines)

THINK & SEARCH

3. What two purposes do webs serve for spiders?
(where the spider lives, and used to catch insects for food)
4. Why does the orb spider move along the crosslines of his web?
(the crosslines are the only parts of the web that aren't sticky)

ON MY OWN

5. Why do the lines of the spiders web need to be made from a strong thread?
(so the insects can't get away)
6. What does the spider do with the insect that gets caught in his web?
(eats it)

"Wild Canada Geese"

The Canada goose is the most famous of all wild geese. A Canada goose is also beautiful. It's body and wings are a brownish color and it's long neck and head are black. It has a light colored "chinstrap" of feathers around it's throat. The sound a Canada goose makes is a honking sound. Some people think it sounds musical like a trumpet.

Canada geese do not live in one place. They migrate, or travel thousands of miles each year. During the summer Canada geese live in the northern United States. In early fall the geese fly south to Mexico, and the Gulf States. Geese fly south because the air in the north is beginning to turn cold. Canada geese like to stay warm all year round.

When Canada geese travel they fly in groups called flocks. It can be made of as many as one hundred birds. One or two geese lead the flock and the rest follow in a pattern that looks like the letter "V". The leaders of the flock are always older geese. They have traveled the route before and they can remember where to go.

RIGHT THERE

1. What sound does a Canada Goose make?
(a honking sound)
2. Why do Canada geese fly south?
(because the air in the north is beginning to turn cold)

THINK & SEARCH

3. Why are the leaders of the flock always older geese?
(they have traveled the route before and they can remember where to go)
4. How many geese might travel together in a flock?
(as many as one hundred birds)

ON MY OWN

5. Why do geese like to stay warm all year round?
(their feathers are not very warm; it is easier to find food in warm places)
6. Where might the geese live during the Christmas season?
(a warm place like Mexico or the Gulf States)