Appendix A

Types of Comprehension Questions

Types of Comprehension Questions

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| Science Text | Sample Questions to Assess Types of Comprehension Skills |
| Kittens are very small when they are born.  They cannot see nor hear until they are about two weeks old.  During this time, they stay very close to their mothers. | Literal: What are kittens like when they are born?    Inferential: Are kittens born blind and deaf?  Evaluative: Why do kittens stay close to their mothers? Would you like to have a kitten? |

Appendix B

Difference Between Regular Instruction and Using the Think-Aloud Strategy

Difference Between Regular Instruction and Using the Think-Aloud Strategy

|  |  |
| --- | --- |
| Regular Science Instruction | Adding the think-aloud strategy to Science Instruction |
| 1. The lesson begins with teacher activating student’s prior knowledge of science topic. 2. There is usually a graphic organizer such as the KWL chart displayed to organize student responses. The teacher records what students already know about the science topic introduced under the K column (What I Know), and records questions that the students have about the topic under the W column (What I Want to Know). 3. The teacher shows a videotape or read a text to students about the science topic. 4. The teacher scaffold students at the end of the science text. Student responses are recorded under the L column of the chart (What I Learned). 5. The teacher may engage students in a science experiment as an extension activity. 6. The students will be assessed on what they have learned through formal and informal assessments. | 1. The lesson begins with teacher activating student’s prior knowledge of science topic. 2. There is usually a graphic organizer such as the KWL chart displayed to organize student responses. The teacher records what students already know about the science topic introduced under the K column (What I Know), and records questions that the students have about the topic under the W column (What I Want to Know).   Teacher previews the text to look for unfamiliar vocabulary or confusing parts in the story and make comments aloud about what she is thinking when she encounters them in the text in order to clarify for the students the thinking process used to understand unfamiliar vocabulary.  Teacher takes a picture walk (flipping through the pages) to look at illustrations and nonfiction features with students and makes comments aloud about what she notices in the illustrations, asks questions about the pictures, subheadings, and makes predictions based on text features in order to clarify for the students the thinking process used to make predictions about what they are going to learn from the text.   1. The teacher shows a videotape or read a text to students about the science topic.   While reading aloud to students, teacher pauses and make comments about what she is thinking in order to clarify for students how comprehension is taking place.  Teacher articulates her predictions, confusing parts in the story, or connections with prior knowledge to help show comprehension of the text.  The lesson is closed with the teacher making a strong connection to the book, or short review of the purpose of the story aloud to model to the students how to make connections (text-to-text, text-to-self, and text-to-world) in order to clarify for students how comprehension is taking place.   1. The teacher may engage students in a science experiment as an extension activity. 2. The students will be assessed on what they have learned through formal and informal assessments.   Part 2 of Think-Aloud Strategy (We do)   1. There is a gradual release of the think-aloud process to the students by giving them opportunities to make comments about what they are thinking after each paragraph that is being read to them. 2. A chart with sentence starters and strategies will be displayed to record the amount of times they were used to help with understanding the text.   Part 3 of Think-Aloud Strategy (You do)   1. Students will be given an opportunity to construct meaning from text with a partner. (The teacher will read aloud the science text and the students will turn to their partners and say something aloud about what was just read to them). 2. Students will then be faced with the task of reading the science texts on their own and thinking aloud at each stopping point in the text. |

Appendix C

Think-Aloud Sentence Starter Form

Think-Aloud Sentence Starter Form

Place a tallymark each time you hear the student make the following statements.

|  |  |  |
| --- | --- | --- |
| Type | Sentence Starter | Number of Time Used |
| 1. | I can see a…  I predict that…  I think this is… |  |
| 2. | Why did…  This is confusing because… |  |
| 3. | This is really saying…  The big idea here is… |  |
| 4. | I wonder…  A question I have is… |  |
| 5. | I already know that…  Something new that I’ve just learned is… |  |
| 6. | I don’t understand…  I’ll reread this… |  |
| 7. | This reminds me of…  This reminds me of… |  |

Appendix D

Student Observation Checklist

Student Observation Checklist

This checklist is to be used to document student utilization of the think-aloud strategy while reading science text.

\_\_\_\_\_\_\_\_\_\_1. Did the student take a picture walk (flipping through the pages) to look at

illustrations and nonfiction features and make comments aloud about what is noticed in the illustrations, ask questions about the pictures and subheadings, and make predictions based on text features?

\_\_\_\_\_\_\_\_\_\_2. Did the student think aloud by sharing uncertainties, questions,

responses, feelings, and connections that appear during reading?

\_\_\_\_\_\_\_\_\_\_3. Did the student verbalize inferences that were made, including inferences

deduced from new words and ideas, themes, illustrations, and photos?

\_\_\_\_\_\_\_\_\_\_4. Did the student formulate questions that came into mind as he or she read?

\_\_\_\_\_\_\_\_\_\_5. Did the student verbally link up background knowledge as he or she came

across new information?

\_\_\_\_\_\_\_\_\_\_6. Did the student share his or her thoughts while working through confusing

parts and apply fix-up strategies?

\_\_\_\_\_\_\_\_\_\_7. Did the student make a strong connection to the text or short review of the

purpose of the story aloud (i.e., text-to-text, text-to-self, and text-to-

world)?

Student Comments After Each Paragraph (Think Aloud)

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Appendix E

Distribution of Treatment Students’ Pretest Science Achievement

Distribution of Treatment Students’ Pretest Science Achievement



Appendix F

Distribution of Control Students’ Pretest Science Achievement

Distribution of Control Students’ Pretest Science Achievement



Appendix G

Distribution of Treatment Students’ Posttest Science Achievement

Distribution of Treatment Students’ Posttest Science Achievement



Appendix H

Distribution of Control Students’ Posttest Science Achievement

Distribution of Control Students’ Posttest Science Achievement



Appendix I

Descriptive Statistics for Use of Think-Aloud Strategy on Living and Nonliving

Descriptive Statistics for Use of Think-Aloud Strategy on Living and Nonliving

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Think-aloud strategy *N* Minimum Maximum  *M SD*

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1 24 1.00 9.00 3.50 1.82

2 24 0.00 2.00 0.33 0.56

3 24 0.00 7.00 1.04 2.01

4 24 0.00 2.00 0.46 0.72

5 24 0.00 7.00 3.13 2.17

6 24 0.00 2.00 0.25 0.53

7 24 0.00 3.00 1.38 1.17

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Appendix J

Descriptive Statistics for Use of Think-Aloud Strategy on What Is Matter?

Descriptive Statistics for Use of Think-Aloud Strategy on What Is Matter?

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Think-aloud strategy *N* Minimum Maximum  *M SD*

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1 24 3.00 14.00 7.83 2.76

2 24 0.00 5.00 1.08 1.14

3 24 0.00 5.00 1.38 1.61

4 24 0.00 4.00 1.58 1.32

5 24 0.00 10.00 5.08 2.59

6 24 0.00 4.00 0.92 1.18

7 24 0.00 10.00 2.13 2.15

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Appendix K

Descriptive Statistics for Use of Think-Aloud Strategy on What Does Light Do?

Descriptive Statistics for Use of Think-Aloud Strategy on What Does Light Do?

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Think-aloud strategy *N* Minimum Maximum  *M SD*

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1 24 1.00 6.00 3.04 1.46

2 24 0.00 3.00 0.29 0.75

3 24 0.00 5.00 0.75 1.26

4 24 0.00 2.00 0.42 0.58

5 24 0.00 7.00 2.67 2.18

6 24 0.00 2.00 0.33 0.64

7 24 0.00 5.00 1.54 1.47

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