

Long-Answer Question Rubric

	4	3	2	1	0
<p>Explaining & Interpreting your Answer</p> <p>MA.E.1.2.1.5.6 The student analyzes and explains orally or in writing the implications of the data.</p> <p>LA.B.2.2.1.5.1 The student writes notes, comments, and observations that reflect comprehension of fifth-grade or higher level content and experiences from a variety of media.</p>	<p>You explain the implications of the data so clearly and completely that someone else can find the answer in a new situation. The interpretations you give can be inferred from the information.</p>	<p>You explain the implications of the data so that someone else can find the answer. The interpretations you give can be supported by the information.</p>	<p>You may begin to explain the implications of the data, but you do not clearly show how to find the answer. The interpretations you give are not always supported by the information.</p>	<p>Your explanation of the implications of the data is incomplete or flawed. The interpretations you give cannot be supported by the information.</p>	<p>Your explanations and interpretations of the data are incorrect, misunderstood, or not given.</p>
What each level means...	Your work shows a complete understanding of the concepts & critical thinking used in the problem.	Your work shows an essential understanding of the concepts & critical thinking used in the problem.	Your work shows a partial understanding of the concepts & critical thinking used in the problem.	Your work shows a limited understanding of the concepts & critical thinking used in the problem.	Your work shows no understanding of the concepts & critical thinking used in the problem.

FCAT format adapted from Harcourt Brace & Company: The Math Advantage by Kristy Rousseau

Activity - Observing the Evidence

Detective _____

1. Review yesterday's work.
2. Choose and verbally describe which type of graph would best reveal the mean, median, and mode of the data.

GRAPH	YES	NO	EXPLANATION
Line			
Bar			
Circle			
Stem-and-leaf			

3. Study the two stem-and-leaf plots created by using the data collected from _____ (enter school name) 4th and 5th grade teachers. Complete the chart below.

"How much time should the average 5th grade student spend on homework to make good grades?"

4 th grade teachers		5 th grade teachers	
Mean		Mean	
Median		Median	
Mode		Mode	
Range		Range	

Developed by Gaynell Jones

Activity - Observing the Evidence

4. Explain the relationship between each kind of graph (bar, circle, line) and the measure of central tendency (mean, median, mode, and range).

(Teacher question)

5. Discussion: Is there a need for fair (unbiased) and representative sample (a sample intended to be representative of a whole population - also known as a cross-section).

6. Detective Diary Entry #4, "How can we find a REPRESENTATIVE SAMPLE of 5th grade students for our survey?" Write your response in complete sentences.

ASSIGNMENT: Conduct a new survey that should be REPRESENTATIVE of all 5th graders concerning the original question, "How much time should the average 5th grader spend on homework to make good grades?"

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Activity - Observing the Evidence

7. Detective Diary Entry #5, "What question(s) would you ask in your survey?"

8. In groups no larger than four, decide which questions from DD #5 to use in your survey.

9. Peer-assessment of DD#4 and DD#5. Use the Short-Answer Question Rubric.

10. RESPONSIBILITIES FOR COLLECTING DATA:

- Group members survey six 5th grade students from the school
- Ask classmates to make sure that they survey students who have not already been questioned
- Be ready to use your results tomorrow in class

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Activity - Observing the Evidence

(Optional) MOCK Results from 4th and 5th grade teachers below.

4th grade teacher responses:

50 minutes
55 minutes
50 minutes
60 minutes
65 minutes
75 minutes
45 minutes

stem	leaf
4	5
5	005
6	05
7	5

5th grade teacher responses:

70 minutes
50 minutes
75 minutes
55 minutes
55 minutes
60 minutes
65 minutes
60 minutes

stem	leaf
5	055
6	005
7	05

Developed by Gaynell Jones

Mock Results of 4th and 5th Grade Teachers

Survey question: How much time (per week/7 days) should the average 5th grade student spend on homework to make good grades?

Mrs. Gibson	7 hours
Mrs. Ayers	7 hours
Mrs. Shults	8 hours
Mrs. Capes	9 hours
Mrs. Laramore	9 hours
Mrs. Eubanks	10 hours
Mrs. Mann	11 hours
Mrs. Garner	12 hours
Ms. Hewitt	14 hours
Mr. Howell	14 hours

Mr. Johnson	8 hours
Mrs. Kelley	9 hours
Mrs. Starling	9 hours
Mrs. King	10 hours
Ms. Koehnemann	11 hours
Mrs. Laramore	11 hours
Mr. Lee	12 hours
Ms. Levy	12 hours
Mrs. Long	14 hours
Ms. Dukes	14 hours
Mrs. Nichols	14 hours
Ms. Burgess	14 hours

Mock Results of 4th and 5th Grade Teachers

Sample stem-and-leaf plot for TABLE 1

Responses from 10 -- 4th grade teachers

Per week = 7 days

Stem	Leaf
1	77899 01244

Measures of Central Tendency for TABLE 1

Mean = 10.1 hours

Median = 9.5 hours

Mode(s) = 7, 9, and 14 hours

Range = 7 hours

Sample stem-and-leaf plot for TABLE 2

Responses from 12 -- 5^h grade teachers

Per week = 7 days

Stem	Leaf
1	899 011224444

Measures of Central Tendency for TABLE 2

Mean = 11.5 hours

Median = 11.5 hours

Mode(s) = 14 hours

Range = 6 hours