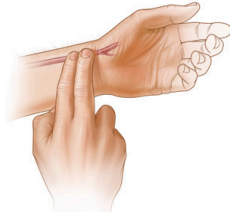



➤ Note: A score of 4 or more for each section (F, D, C, A) is required to MEET.

	6	5 (Exceed)	4 (MEET)	3 <> 2 1 0	Yours:
(F) Forming the Investigation: Based on observations scientific principles, propose questions that can examined through scientific investigation.					F _____
1. Background Information		Provides background, observations and scientific principles to provide a detailed context for this investigation.	Provides background , scientific principles and observations related to the question .	Provides background that is incomplete or only partially relates < > not connected to question.	
2. Question/ Hypothesis		Can be scientifically investigated; shows understanding.	Clear; can be scientifically investigated (will use numbers to compare/answer).	Incomplete < > can not be investigated.	
3. Question/ Hypothesis		Guides the design of an effective or innovative investigation.	Guides the design of an effective investigation..	Unclear or <> does not guide the design of an effective investigation.	

Background Research: Your pulse is your heartbeat rate or heart beats per minute.



Checking your pulse on the wrist
 You can easily check your pulse on the inside of your wrist, below your thumb.
 • Gently place 2 fingers of your other hand on this artery.
 • Do not use your thumb, because it has its own pulse that you may feel.
 • Count the beats for 30 seconds, and then double the result to get the number of beats per minute.



Checking your pulse in the carotid artery
 You can also check your pulse in the carotid artery. This is located in your neck, on either side of your windpipe. Be careful when checking your pulse in this location, especially if you are older than 65. If you press too hard, you may become lightheaded and fall.

<http://www.webmd.com>:

Background or Pre-Trial Observations:

1. Practice taking your own heart rate using both methods. Record here.
2. Then write which method you will use and why.

Question/Hypothesis:

(D) Designing the Investigation: Design safe and ethical scientific investigation to gather data to respond to a question/hypothesis.				D
	6 5 (Exceed)	4 (MEET)	3 2 <> 1 0	Yours:
4. Procedures	Logical procedures in a precise and efficient design that maximize resources which contribute to the outcome	Logical procedures that can be easily and accurately followed. Tells how to set up, run tests, and what to record.	Partially logical procedures with some or minor errors <> Illogical procedures that are difficult to follow; some errors.	
5. Procedures Organization	Thoroughly identifies variables (including controls); defines a systematic process.	Identifies variables and controls relevant to the procedures.	Partially defines variables and controls. <>Variables not present or not defined.	
6. Quantity and Quality of Data	Design calls for data of exceptional quality and quantity to address question/hypothesis	Design calls for appropriate resources and materials to collect relevant data (that will answer question).	Design calls for insufficient resources, materials and techniques to collect relevant data.	

Variables: _____

Independent /Manipulated Variable: _____

Dependent/Responding Variable: _____

Variables to Control (or Control Group): _____

Procedures (Numbered List):

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

Illustration: _____

(C) Collecting and Presenting Data: Collect, organize and display data. Use labeled charts and graphs to present your results.				C
	6 5 (Exceed)	4 (MEET)	3 <> 2 1 0	Yours:
7. Collection of Data	Collects detailed data consistent with design.	Collects data consistent with design, that helps answer the question.	Collects data somewhat consistent with design. <> Data inconsistent with design.	
8. Recording of Data	Records detailed, relevant and annotated data in a consistent and organized manner.	Records relevant (useable) and accurate data in a consistent and organized way.	Records relevant data that is inconsistent or disorganized <> Data irrelevant or inaccurate.	
9. Display of Data (Graph or Display)	Displays data to highlight information and patterns; supports interpretation of relationships.	Summarizes and displays data to answer question and to support analysis and interpretation.	Display incomplete or disorganized <> Display incomplete or disorganized.	

Observation Chart: Attach original charts.

	Totals				
	Averages or Percentages				

Display Graph:

(A) Analyzing & Interpreting Results: Analyze results and develop conclusions. Include what you found and your errors.				A
	6 5 (Exceed)	4 (MEET)	3 2 <> 1 0	Yours:
10. Results and Analysis Paragraph	Analyzes relevant data, including patterns and trends; relates the results to other scientific information.	Analyzes relevant data with evidence based explanation of the results. Uses numerical summary of data to explain.	Partially analyzes data with a general explanation of the results. <> Inaccurately analyzes data with a simplistic explanation.	
11. Conclusion and Error Review	Clearly communicates conclusions including magnitude and sources of error and possible affect on results.	Clearly communicates conclusions including possible sources of error and possible effect on results.	Communicates general conclusions; sources of error irrelevant or formulaic <> Incomplete conclusions and sources of errors.	
12. Conclusion	Relates detailed results to question or hypothesis. Suggests and outlines further investigations, based on results.	Relates results to question or hypothesis. Suggests relevant revisions or further investigations based on results.	Partially relates results to question. Suggests relevant revisions; no justification<> Results not related to question. Revisions irrelevant.	

Analysis with Evidence:

Error Sources:

Conclusion Using Numerical Summary:

Revisions Or Further Investigations:
