



# SCIENCE NOTEBOOK FORM

1. Define your testable question:

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2. Identify variables for the experiment

a. Independent variable (factor you changed)

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b. Dependent variable (factor that changed due to independent variable)

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3. Controlled variables (identify the factors you plan to keep the same in your experiment)

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4. Hypothesis (identify what you predict will happen to the dependent variable changes)

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5. Experiment Plan (list of materials and detailed step by step directions for your investigation).

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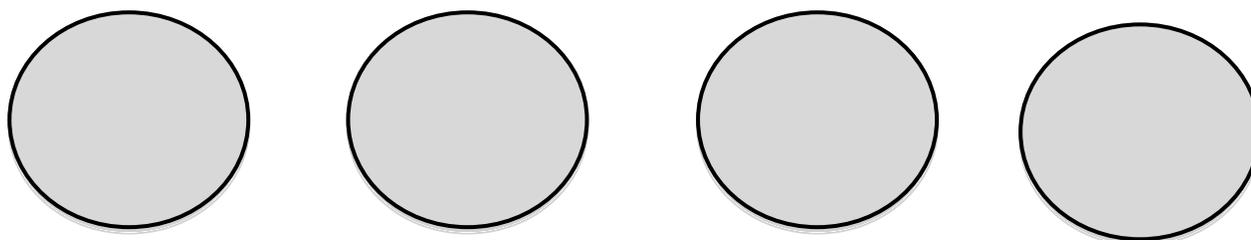


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6. Results (attach one or more separate sheets of: 1. Observations; 2. Data tables; 3. Graphs.



Petri Dish Label	Growth Under Band-aid?	Zone of Inhibition (mm)

7. Conclusion/Explanation of Results (The conclusion should refer to your hypothesis and use the results to give a reasonable explanation of what happened with your experiment)

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8. Ag Nanoparticles and Consumers – What are the implications of using Ag nanoparticles in consumer products? Base your answer on using credible sources. Cite your references.

**RUBRIC:** For each item listed below, an evaluation will be made on the following scale:

- 10= EXCELLENT. Work demonstrates a high degree of thought, effort and attention to instructions.
- 8= ACCEPTABLE. Work demonstrates thought and effort. Some room for improvement.
- 6=NEEDS WORK. Work shows some promise, but lacks sufficient detail or effort shown in acceptable work.
- 4=MINIMAL EFFORT. Little or no thought or effort. Incomplete or unfinished. Unacceptable.
- 0=Not attempted.

**10 8 6 4 0 QUESTION, VARIABLES AND HYPOTHESIS**

- ✓ Clear and TESTABLE QUESTION. Not a “How” or “Why” question. Reading the question leads logically to an experiment to answer the question.
- ✓ Variables are correctly identified for the experiment.
- ✓ All necessary variables that could have an effect on the outcome are controlled
- ✓ Hypothesis discusses how the dependent variable will vary with the independent variable.

**10 8 6 4 0 EXPERIMENT PLAN**

- ✓ The plan is detailed and easy for the reader to follow.
- ✓ The procedures are safe, ethical and doable with available materials.
- ✓ Specific materials are identified on the first two lines.
- ✓ Procedure is recorded as numbered steps.

**10 8 6 4 0 RESULTS**

- ✓ Observations are specific and clear statements of fact and avoid assumptions and inferences.
- ✓ Includes qualitative and quantitative results when appropriate.
- ✓ Data tables are logically organized, clearly labeled and units of measure are specified.
- ✓ Graphs are included when necessary.

**10 8 6 4 0 CONCLUSIONS and EXPLANATIONS**

- ✓ Results are used and referred to in conclusions.
- ✓ Explanations are reasonable and do not contradict results.
- ✓ Errors in the experiment are addressed with possible solutions proposed.
- ✓ Needs for further investigation are addressed

**10 8 6 4 0 Ag NANOPARTICLES AND CONSUMERS**

- ✓ Implications are reasonable and include positives and negatives.
- ✓ Sites consumer products and potential impact of use (environmental and economic)
- ✓ Reference sources are cited and appear credible.
- ✓ Needs for further investigation are addressed

**10 8 6 4 0 QUALITY OF WRITING**

- ✓ Answers express complete thoughts and are written in complete sentences.
- ✓ Writing is done in impersonal tone and avoids the use of “I” and “WE”.
- ✓ Plan is detailed and avoids the use of “it” and “they”.

**10 8 6 4 0 NEATNESS**

- ✓ Work is neat and legible.
- ✓ Evidence of effort to follow all directions and present a high quality finished product.