Bottle Biosphere Experiment

*Essential Question: What components are necessary to create a self-sustaining ecosystem?*

Learning Objective: I can describe the interactions between living organisms and their environment in a lab report detailing my Bottle Biosphere experiment.

Instructions:

You will design and build a Bottle Biosphere including an aquatic and terrestrial ecosystem to observe changes over the course of one week to determine the interaction between living and non-living factors within your closed ecosystem.

Products:

1. A functioning self-contained Bottle Biosphere
2. Typed lab report detailing your experiment with a 4-5 sentence summary conclusion paragraph demonstrating your mastery of the learning objective.

Completion Checklist:

* Research various types of bottle biosphere designs and choose which one you would like to build.
* Write a materials list for what you will need to build your Biosphere.
* List all biotic and abiotic factors you will include in your terrestrial and aquatic ecosystem
  + Requirements include the following:
    - Biotic Components: At least one producer, consumer, and decomposer
    - Abiotic Components: At least 3 different abiotic components
* Create a list of procedures for how you will construct your Biosphere and what observations you will take during the week-long observation period.
* Develop a hypothesis to predict what will occur during your experiment.

*(All of the above must be approved by Ms. Burdick before you begin the actual construction an start of the experiment.)*

* Recorded observations of changes you notice over the course of a week.
* Typed lab report organized into the following parts:
  1. Title
  2. Hypothesis
  3. List of Construction Materials
  4. List of Biotic/Abiotic factors
  5. Procedures (plan and construction) including any diagrams or photos
  6. Observational Records (data)
  7. Conclusion

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