BIOMIMICRY RESEARCH PROJECT

**DAY 1: Defining the Problem and Researching Solutions**

Work in a group of 3-4 (TAKE NOTES IN YOUR NB!)

1. Define/redefine the problem in your own words.

Example: I want a hovercraft.

1. Ask the question in biological terms.

Example: How do various animals hover?

1. Research the problem and possible solutions.
2. Record your ideas/information in your NB.
3. List questions you have and information needed to solve it.

Example: How do current hovercrafts work? Which animals hover? Which animals must hover to survive? How does a hummingbird hover?

1. List topics and keywords to use in your research.

Two credible sources are required. A good place to start is www.asknature.org

**DAY 2 and 3: Research and Design**

1. Continue to research if needed
2. Propose a solution to the problem by using biomimicry
3. Design an example of your solution!
   1. The design can be on a poster or on the computer
4. Your poster/slides or whatever you choose to present must include the following:
   1. All parts of the design labeled.
   2. A list of materials to be used
   3. Estimated measurements in your design
   4. Explain why you think this solution will work
   5. Describe how your design was inspired by nature
   6. A list (MLA format) of all sources used for this project
5. EXTRA CREDIT OPTION: Build a 3-D model of your design - Due the day you present!

**DAY 4 and 5: Present Design**

You will present your project in a 4-5 minute presentation!

Sign up for your presentation slot in class!

Period Number: \_\_\_\_\_\_\_\_\_ Topic: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group Members:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Grading Criteria:**

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| --- | --- | --- | --- |
| **Required items** | **Needs improvement (3)** | **Good (4)** | **Great (5)** |
| **Problem Summary** | Summary does not fully explain the problem. | Summary explains the problem but does not include the question in biological terms. | Complete summary and problem are explained in detail and in biological terms. |
| **Research** | Sources are lacking or not credited. | Only one source or failure to properly credit a source | At least two credible sources used and attributed. |
| **Inspired by Nature** | Nature is not mentioned in the design. | Nature is referenced, but the connection from nature to the design is not fully explained. | Describes how design was inspired by nature and how nature was incorporated into the design. |
| **Design (diagram, drawing, etc.)** | Missing many labels or measurements. Design is difficult to interpret. | Missing some labels or measurements. | All the parts are labeled. All materials used are listed. Measurements are estimated and labeled. |
| **Oral Presentation** | Most of the presentation done by one person and/or presenters are difficult to hear.  Presentation time is way off target. | Decent voice volume but one or two members speak more than others.  Mostly within time limit but does not seem rehearsed. | All members are easy to hear and have an equal verbal role  Presentation is within time limit and is well rehearsed. |