

# BIOMIMICRY

## YOUTH DESIGN CHALLENGE

### YDC Project Rubric

Project Name: \_\_\_\_\_

Grade Band: Middle School or High School (circle one)

Grade Level: \_\_\_\_\_ Other \_\_\_\_\_ (list any combination classes or HS course here)

Component	Superior Level (4)	Proficient Level (3)	Progressing Level (2)	Basic Level (1)	Eval 1	Eval 2	Eval 3	Total
Communicate - Empathize and Present (Video Pitch)	Video includes evidence of an empathy interview or related research AND clearly explains the project (problem, process of biomimicry, solution).	Project video show evidence of an empathy interview/research OR clearly explains the project (problem, process of biomimicry, solution).	Project video seems to show gaps in knowledge or understanding. Excludes pieces of the learning experience and/ or solution offered.	Project video is confusing or unrelated to the project.				
Innovate - (Innovate, Slide 4)	Problem is defined with a proposed solution that defines all 3 requirements:  1. who needs the design; 2. what is needed in the design; 3. why is the design needed	Problem is defined listing 2 of the 3 requirements:  1. who needs the design; 2. what is needed in the design; 3. why the design is needed	Problem is defined listing 1 of the 3 requirements:  1. who needs the design; 2. what is needed in the design; 3. why the design is needed	Problem is not defined and none of the requirements are met.				
Match - Biological Models (Match, Slide 5)	Demonstrates thorough research of multiple organisms, presents biological models concisely and offers sketches/ diagrams to explain how the strategy/mechanism works.	Demonstrates research of multiple organisms and successfully presents biological models that explain how the strategy/ mechanism works.	Demonstrates research of one or more organism, presents biological model(s) that needs improvement to better explain how the strategy/mechanism works.	Shares research of one or more organism but does not attempt to demonstrate how the strategy/ mechanism works.				

Component	Superior Level (4)	Proficient Level (3)	Progressing Level (2)	Basic Level (1)	Eval 1	Eval 2	Eval 3	Total
Investigate - Problem Definition (Abstract, Slide 3)	All portions of the problem are listed: 1. SDG addressed; 2. Biological models used as mentors; 3. Criteria and Constraints.	Two of three portions of the problem are listed: 1. SDG addressed 2. Biological models used as mentors; 3. Criteria and Constraints.	One of three portions of the problem are listed: 1. SDG addressed; 2. Biological models used as mentors; 3. Criteria and Constraints.	The problem addressed is not clear.				
Motivate - Biomimicry Designs (Final Project Image, Slide 8)	Uses all 3 elements of biomimicry: 1. Ethos—care for life; 2. (Re)connect—field or AskNature research; 3. Emulate—mimics nature.	Uses 2 elements of biomimicry: 1. Ethos—care for life; 2. (Re)connect—field or AskNature research; 3. Emulate—mimics nature.	Uses 1 element of biomimicry: 1. Ethos—care for life; 2. (Re)connect—field or AskNature research; 3. Emulate—mimics nature.	Uses biomorphism or bioutilization.				
Innovate - Developing and Using Models (Iterations/Process, Slides 6 & 7)	Translates biological model(s) into Abstracted Design Strategies effectively, AND: Uses models and simulations to brainstorm possible solutions to a problem with data to justify design choices AND Models are annotated to show the strengths and limitations of the designs.	Translates biological model(s) into Abstracted Design Strategies effectively, AND: shares ideas for brainstorming possible solutions to a problem with data to justify design choices AND provides models that show the strength and limitations of the designs.	Attempts to translate biological model(s) into Abstracted Design Strategies, AND: shares ideas for brainstorming possible solutions to a problem with data to justify design choices OR models are attempted to diagram potential solutions.	Attempts to translate biological model(s) into Abstracted Design Strategies but are confusing or inaccurate; ideas/models could be present but not clearly annotated/explained.				

<b>TOTALS</b>								
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**Judging Comments:**