**Eco-Engineering Design Challenge Rubric**

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| **Score** | **Persistence****Failure / Feedback** | **Curiosity****Research** | **Creativity****Design Ideas / Design Materials** | **Engineering Design Process** **Building / Testing / Modification** |
| 1 | No comfort with failure: Prompted, but unwilling to discuss failure | No response to feedback from mentor or to seeing other teams’ ideas | No evidence that relevant research was conducted | No evidence a design was drawn and labeled  | No materials labeled in design or identified verbally | Building is incomplete or not in evidence | No testing of prototype documented | No iterations or revisions noted  |
| 2 | Some comfort with failure: Able to identify one thing that did not work as anticipated | Responded to feedback from mentor OR to ideas from other teams’ designs | Researched designs but not needs of beneficiary (target audience) | Design drawn and labeled; replicated an existing model without new elements | Materials labeled in design and at least one material is different from example  | Prototype built | Prototype tested | Test results explained; modifications not made |
| 3 | Comfort with failure: Discussed failure thoroughly and reflected upon it | Responded to feedback from mentor AND to ideas from other teams’ designs | Researched needs of beneficiary (target audience) | Design incorporated novel thinking or original ideas but was more decorative than functional | Student was resourceful in repurposing used materials OR creative in use of materials different from example | Student explained how prototype was built, verbally or in writing | Student described testing of prototype and collected data | Student described or labeled modifications made after testing |
| 4 | Building upon failure: Explained failure and made an improvement upon design that reflects this | Student explained how feedback or seeing ideas from other teams contributed to own improvements | Student explained how research about beneficiary’s needs informed design features | Design incorporated novel thinking or original ideas while also being functional and responding to needs of beneficiary |  Design incorporated at least one materials not in example AND used recycled or repurposed material | Prototype built | Prototype tested; data collected; design implications described | Effectiveness of modified design was measured and explained |
| NA | None of the questions they answered or responses from mentors specifically called upon them to discuss failure | No mentor / no opportunity provided to see other teams’ designs during the challenge | No evidence of research before design | No design created | No new materials used in design | No build | No testing | Incomplete answer, or no modifications |
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