Rubric for student outcome 1d: Treehouse Designs and Specifications

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|  | **Performance Indicators** | **Below standard** | **Meets standard** | **Above standard** | **Exemplary performance** |
| 1 | Mechanical considerations and functionality | Designs show little consideration of mechanical properties; little to no support of design decisions. | Designs consider multiple mechanical properties and provide some quantitative reasoning for decisions. | Designs consider all highly relevant mechanical properties and show thorough quantitative support for decisions. | Designs consider mechanical properties beyond those necessary, provide quantitative support for major mechanical decisions and qualitative support for minor considerations. |
| 2 | Variation of Design | Designs are all very similar, with only minor variations. | Designs differ in more than one way, but may revolve around changing only these ways (ie. All designs have a different material and shape, only). | Designs show variety in several different ways and have only basic overlap; each design offers a unique benefit. | Designs vary in many aspects and consider variation to the basic needs of the consumer. Each design has its own benefits. |
| 3 | Clarity of Design Concept | Design is hard to visualize; design decisions are difficult to understand. | Design is clear and understandable; supporting decisions are explained. | Design is easy to visualize, decisions are clear in relation to overall design. | All aspects of design are understood; supporting figures are provided, decisions are supported through design visual. |
| 4 | Teamwork & Coherence of Presentation | No introduction or explanation of logic behind different designs. No theme evident. | Introduction may be provided explaining how designs relate, or each design mentions its benefits/drawbacks. May be hints of a theme.  | Introduction provides overview of rationale to designs. Benefits of design are clear. Designs may overlap one another in the theme; not completely balanced. | Introduction provides overview of rationale to designs. Benefits of design are clear and there is a clear theme and leveraging of ideas. |
| 5 | Societal Impact (Curiosity & Project Engagement) | Designs show little to no consideration beyond the mechanical. | Designs are considerate of the client needs and show some evidence of research beyond purely mechanical aspects. | Designs emphasize consideration of the client, impact on the surroundings, and how to adjust to those needs. Research has been done.  | Designs emphasize consideration of the client and the surroundings, as well as modularity to overall society. Specific research is demonstrated. |