STEM Rubric

Scientist: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Environmental Issue: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Invention: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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|  | **3**  **Mastery** | **2**  **Progressing** | **1**  **Concern** | **0**  **Unacceptable** |
| ***Curiosity*** | | | | |
| Purpose | Independently identified an issue which was interesting to the student and which could be solved. | Identified, with adult help, an issue which was interesting to the student and which could be solved. | Identified, with adult help, an issue which could be solved. | Identified an issue that could not be solved. |
| Rationale | Student provided a clear and detailed rationale for their invention. The purpose directly relates to the environmental issue. | Student provided a clear rationale for their invention. The purpose relates to the environmental issue. | Student provided a brief rationale for their invention. The purpose vaguely relates to the environmental issue. | Student did not provide a rationale for their invention. |
| ***Character*** | | | | |
| Self-control | Student clearly reflects upon his/her choices before making them. No need for redirection. | Student strives to make positive choices most of the time. Rarely needs redirection. | Student makes inconsistent choices without prior thought. Usually needs redirection. | Student shows no evidence of self-control. |
| Time Management | Routinely uses time well throughout the project to ensure things get done on time. | Usually uses time well throughout the project, but may have procrastinated on one thing. | Tends to procrastinate, but always gets things done by the deadlines. | Rarely gets things done by the deadlines AND has to adjust deadlines or work responsibilities because of this person's inadequate time management. |
| ***Contemplation*** | | | | |
| Sketch | Independently developed an understandable, interesting blueprint to try to solve the problem (includes detailed labels). | Independently developed a mostly understandable, interesting blueprint to try to solve the problem (includes labels). | Independently developed a somewhat understandable, interesting blueprint to try to solve the problem (vague labels). | Needed adult assistance to develop an understandble blueprint (no labels). |
| Pros and Cons | Student thoroughly analyzed the pros and cons of their design. All possible benefits and harms are presented. | Student analyzed the pros and cons of their design. Most possible benefits and harms are presented. | Student analyzed most of the pros and cons of their design. Some possible benefits and harms are presented. | Student did not analyze the pros and cons of their design. |
| ***Concretion*** | | | | |
| Model | Great care is put into final product so that student’s work is neat, attractive, and accurately reflects blueprint’s plans. | Care is put into final product so that student’s work is neat, attractive, and reflects blueprint’s plans. | Some care is put into final product, but does not reflect blueprint’s plans. | No evidence of care or effort put into student’s work. |
| Spelling, Punctuation, Grammar | One or fewer errors in spelling, punctuation and grammar on the poster. | Two or three errors in spelling, punctuation and grammar on the poster. | Four errors in spelling, punctuation and grammar on the poster. | More than four errors in spelling, punctuation and grammar on the poster. |
| ***Collaboration*** | | | | |
| Attitude | Never is publicly critical of the project or the work of others. Always has a positive attitude about the task(s). | Rarely is publicly critical of the project or the work of others. Often has a positive attitude about the task(s). | Occasionally is publicly critical of the project or the work of other members of the group. Usually has a positive attitude about the task(s). | Often is publicly critical of the project or the work of other members of the group. Often has a negative attitude about the task(s). |
| Focus | Consistently stays focused on the task and what needs to be done. Very self-directed. | Focuses on the task and what needs to be done most of the time. Other group members can count on this person. | Focuses on the task and what needs to be done some of the time. Other group members must sometimes nag, prod, and remind to keep this person on-task. | Rarely focuses on the task and what needs to be done. Lets others do the work. |
| ***Cultivation*** | | | | |
| Materials & Cost | Student clearly and specifically listed the required materials and related costs of invention. | Student listed the required materials and related costs of invention. | Student only listed some of the required materials and related costs of invention. | Student did not list the required materials and related costs of invention. |
| Design Features | Student thoroughly explained all the design features of invention. The purpose of each feature is clear. | Student explained all the design features of invention. The purpose of each feature is mostly clear. | Student vaguely explained all the design features of invention. The purpose of each feature is unclear. | Student did not explain the design features of invention. |
| ***Caring*** | | | | |
| Conclusion | Student explained, in detail, how the results could be applied to real life. Student reflected in detail on the experience and importance of invention. | Student explained how the results could be applied to real life. Student reflected on the experience and importance of invention. | Student vaguely explained how the results could be applied to real life. Student somewhat reflected on the experience and importance of invention. | Student did not explain how the results could be applied to real life. Student did not reflect on the experience and importance of invention. |
| Islamic Connection | Student found 1+ ayah/hadith related to topic of being a caretaker of the environment. Student elaborated in detail on the connection. | Student found 1+ ayah/hadith related to topic of being a caretaker of the environment. Student elaborated on the connection. | Student found 1+ ayah/hadith related to topic of being a caretaker of the environment. Student did not elaborate on the connection. | Student did not include an ayah/hadith related to topic of being a caretaker of the environment. |

Teacher Comments:

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