**Table 2. Rubric adapted from Evidence-Based Reasoning Framework (Brown et al., 2010) for assessing student understanding about the phenomenon of increase in average global surface temperatures**

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| --- | --- | --- | --- |
|  | **Components** | **Scores** | **Explanation** |
| 1. | Using data for explaining the phenomenon of global increase in average surface temperatures. | **2** | Student is able to identify and describe the data for variables and trends in the graphs. Student uses this information to describe the phenomenon of global increase in average surface temperatures. |
|  | | **1** | Student is able to identify the variables and trends evident in the graphs. Student describes the phenomenon of global increase in average surface temperatures. |
| **0** | Student uses prior knowledge to describe global climate change. Variables or trends visible in the graphs are not identified |
| 2. | Interpretation of evidence for explaining the correlation between temperature and carbon dioxide concentrations in the atmosphere | **2** | Student identifies the trends on the graphs from EzGCM to describe the relationship between carbon dioxide concentrations in the atmosphere and increase in average surface temperature. |
|  | | **1** | Student identifies the trends on the graphs from EzGCM but does not use this information to describe therelationship between carbon dioxide concentrations in the atmosphere and increase in average surface temperature. |
| **0** | Student does not identify the variables or trends on the graphs from EzGCM |
| 3. | Application of evidence in producing a prediction | **1** | Student uses observations from data and evidence from EzGCM, for making a prediction about the average surface temperatures in the future |
|  | | **0** | No rules are evident for student’s prediction made about the average surface temperatures in the future |