**Rubric for Scientific Explanations for EDDIE Hypoxia Module for Activity C**

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| **Proficiency level** | ***1. Data D*escriptions**  *Thoroughly describe all trends, patterns similarities and/or differences etc. (“T/P/D/S/etc.”) in the data*. | ***2. C*onclusion**  *A statement that identifies the cause(s) of hypoxic events in the Chesapeake Bay.* | ***3. E*vidence\***  *The scientific data described in “D” that support the student’s conclusion. The evidence included need to be appropriate and sufficient to support the conclusion.* | ***4. R*easoning**  *An explanation/justification that connects the quantitative evidence\* to the conclusion, and shows why the data count as evidence by connecting to interpretations and including understanding of appropriate and sufficient scientific principles (appropriate for disciplinary context provided).* |
| 0 | None given; completely irrelevant | None given; or completely irrelevant | None given; or completely irrelevant | None given; or completely irrelevant |
| weak | Provides few “T/P/D/S/etc.” descriptions or mostly inappropriate or inaccurate descriptions and/or level of detail of descriptions. | Makes an inaccurate conclusion given the data used; or restates a data description | Provides very little (when more is present) and/or inappropriate evidence (evidence that does not support the conclusion). | Provides very little or inaccurate or inappropriate reasoning. |
| ~passing | Provides some accurate “T/P/D/S/etc.” descriptions; but not all; or level of detail is inappropriate for some described. | Makes an accurate but incomplete conclusion. | Provides appropriate, but insufficient, evidence (given all data present) to support conclusion made. Or includes sufficient evidence but also includes inappropriate evidence. | Provides reasoning that connects the evidence to the conclusion. May include some, but insufficient scientific principles or justification for why the evidence supports the conclusion |
| Strong answer | Completely describes all “T/P/D/S/etc.” at an appropriate level of detail: . | Makes an accurate and complete conclusion. | Provides appropriate and sufficient evidence to support conclusion. | Provides reasoning that connects the evidence to the conclusion. Includes appropriate and sufficient scientific principles to explain why the evidence supports the conclusion. |

\* Evidence can be listed separately and then used in the reasoning/explanation or can be evaluated directly from the reasoning/explanation.

Modified from McNeill & Martin (2010)