

MEL Explanation Task Rubric

Science & Engineering Practice	Mastery	Approaching	Developing
<i>Engaging in Argument from Evidence</i>	<ul style="list-style-type: none"> • The student's written explanation accurately and precisely identifies the strength or weakness of the evidence to model link. • These strengths and weaknesses are based on integrating how well the evidence supports or contradicts a particular model and compares how the evidence might support or contradict the other models. • Reasoning shows clear justification from the detailed data in the evidence texts. 	<ul style="list-style-type: none"> • The student's written explanation accurately identifies the strength or weakness of the evidence to model link, but the student's analysis may not be precise and integrated. • In particular, integration of the how well the evidence supports or contradicts a particular model and comparison to other models is missing. • There is little or no justification from the detailed data in the evidence texts and the explanation relies primarily on the evidence statement. 	<ul style="list-style-type: none"> • The student's written explanation has some inaccurate information in identifying the strength or weakness of the evidence to model link. • There is little or no integration and justification for how the evidence supports or contradicts a particular model or the justification between the evidence and the model is incorrectly applied.
<i>Analyzing and Interpreting Data</i>	<ul style="list-style-type: none"> • Clearly uses data from the evidence texts to identify patterns that support the student's evaluation of the evidence to model link. • The patterns identified in the data accurately and precisely describe relationships between variables. • Causal relationships are described. • A high-level response will make some comparative evaluation of multiple lines of evidence and how they support or contradict the different models. 	<ul style="list-style-type: none"> • Does not clearly use data from the evidence texts to support the student's evaluation of the evidence to model link. • The patterns identified in the data accurately describe the relationships between variables. • Only correlational, rather than causal, relationships are described. 	<ul style="list-style-type: none"> • There is limited or no use of data from the evidence texts to support the student's evaluation of the evidence to model link. • There may be errors in how the student analyzed and interpreted the data from the evidence texts. • Relationships between variables are not accurately described.

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<i>Constructing Explanations</i>	<ul style="list-style-type: none"> • The student's written explanation of the evidence to model link is clear and justifications are based on accurate and precise understanding of the scientific content in the evidence texts and scientific reasoning about the connection to the model. • The reasoning within the explanation is causal. 	<ul style="list-style-type: none"> • The student's written explanation of the evidence to model link is clear but does not provide sufficient justification based on the scientific content presented in the evidence texts. • The reasoning within the explanation is correlational. 	<ul style="list-style-type: none"> • The student's written explanation of the evidence to model link displays errors in understanding the scientific content and there is limited or no reasoning to support the explanation.
<i>Developing and Using Models</i>	<ul style="list-style-type: none"> • Student's explanation clearly evaluates the merits and limitations of the two different models of the phenomenon in order to select the most plausible model based on the evidence. 	<ul style="list-style-type: none"> • Student's explanation evaluates the merits and limitations of one of the two different models of the phenomenon in order to select the most plausible model based on the evidence. 	<ul style="list-style-type: none"> • Student's explanation has little or no evaluation of the merits or limitations of one of the two different models of the phenomenon in order to select the most plausible model based on the evidence.