

Energy Flow Diagram Poster (Pt. 2) 3D Assessment Rubric

PE: HS-PS1-4 Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.				
SEP: Developing and Using Models		DCI: HS-PS1 Matter and Its Interactions: Structure and Properties of Matter, Chemical reactions		CCC: Energy and Matter
	Advanced (4/A)	Proficient (3/B)	Developing (2/C)	Beginning (1/DF)
Title	Highly visible, relevant, and creative	Highly visible and relevant	Visible OR relevant	Missing or incomplete
Procedure	Meets all requirements of Proficient	Clear, communicates all steps Relevant to their experiment Format of procedure is legible and in list format	Communicates most steps, or not all clear A few errors in procedure or steps missing Format of procedure is legible	Communicates some steps; not clear Multiple errors in procedure and steps missing Format of procedure is illegible
Model	Meets all requirements of Proficient	Includes macroscopic (large image) and microscopic (particle model) visuals Lab set-up & particle model are clear Particle Model of Liquid Clearly shows movement of particles of liquid inside of can Utilizes arrows to show speed of particle movement Utilizes dotted lines to show attractive interactions between particles Energy Flow Labeled arrows clearly show where energy is coming from and going to Particle model clearly shows where energy is coming from	Includes macroscopic (large image) and microscopic (particle model) visuals Lab set-up or particle model has errors Particle Model of Liquid may (missing 1): Show movement of particles of liquid Utilize arrows to show speed of particle movement Utilize dotted lines to show attractive interactions between particles Energy Flow may (missing 1) Be labeled with arrows that show where energy is coming from and going Particle model shows where energy is coming from	Includes macroscopic (large image) OR microscopic (particle model) visuals with errors Particle Model of Liquid may (missing 2-3 with errors): Show movement of particles of liquid Utilize arrows to show speed of particle movement Utilize dotted lines to show attraction interactions between particles Energy Flow may (missing 2-3, with errors): Be labeled with arrows that show where energy is coming from and going Particle model shows where energy is coming from
Written Explanation	Meets all requirements of Proficient Analyzes procedure and identifies and evaluates sources of error	Shows clear understanding of energy flow and KMT as it applies to particle motion. Demonstrates understanding that particles interact and can stick to each other in various ways Shows substantial understanding of how bonds are broken and made that causes changes in energy and how it is measured using support from evidence	Shows some understanding of energy flow and KMT as it applies to particle motion. Demonstrates understanding that particles interact and can stick to each other in various ways Shows some understanding of how bonds are broken and made that causes changes in energy and how it is measured; evidence may be missing	Shows little understanding of energy flow and KMT as it applies to particle motion. Does not demonstrate understanding that particles interact and can stick to each other Shows no or little understanding of how bonds are broken and made that causes changes in energy and how it is measured, evidence may be missing
Modification	Meets all requirements of Proficient Includes additional, future modifications	Clearly identifies what was changed in procedure Justifies why these changes were made Evaluates and accurately explains how the changes affected their experiment including intermolecular forces and/or total bond energy, supported by evidence	(missing 1): Identify what was changed in procedure Justify why these changes were made Evaluate and explain how the changes affected their experiment including intermolecular forces and/or total bond energy; evidence may be missing	(missing 2-3, with errors): Identify what was changed in procedure Justify why these changes were made Explain how the changes affected their experiment, evidence not used
Overall Appearance	Meets all requirements of Proficient Organization and presentation of materials is exceptional	Poster clearly communicates information Color is used	Poster clearly communicates information Color is used	Needs improvement, incomplete