Onion Chemistry: Elaborate Phase Activity Rubrics

Activity 1: Chemical Change Real-Life Mini-Poster Rubric

Criteria	4 – Excellent	3 – Proficient	2 – Developing	1 – Beginning
Content Accuracy	Scientifically accurate, clear explanation of chemical change with correct vocabulary	Mostly accurate explanation with few minor vocabulary errors	Some misconceptions or missing terminology	Major errors or missing explanation
Visual and Organization	Poster is neat, creative, and includes a clear visual/diagram	Poster includes a visual and is mostly organized	Visual is unclear or layout lacks structure	No visual and lacks organization
Use of Vocabulary	4+ vocabulary terms used and labeled correctly	2–3 terms used correctly	1 term used or partially correct	No appropriate vocabulary
Evidence of Research	Shows depth of understanding; connects real-world observations to chemistry	Good explanation with moderate detail	Limited detail or unclear connection to chemistry	No clear connection to chemical change

Total Score: /16

Activity 2: Comparison Lab Proposal – Onion vs. Garlic Rubric

Criteria	4 – Excellent	3 – Proficient	2 – Developing	1 – Beginning
Background Research	Thorough and accurate, uses scientific vocabulary	Some research included, mostly accurate	Minimal or partially accurate information	Lacks relevant background or terms
Hypothesis	Clear, testable, and shows understanding of content	Reasonable, but may lack depth	Vague or unclear	Missing or off-topic
Procedure Design	Detailed, realistic, includes materials, safety, steps, and data methods	Mostly complete with minor omissions	Missing several components or unclear	Few steps listed, or lacks structure
Expected Results & Analysis	Logical prediction with detailed justification	Reasonable prediction with some support	Minimal justification	No prediction or incorrect explanation

Total Score: /16

Activity 3: “Think Like a Chemist” Reflection Interview Rubric

Criteria	4 – Excellent	3 – Proficient	2 – Developing	1 – Beginning
Scientific Understanding	Clearly explains concepts using accurate science and examples	Explains concepts with minor errors	Basic understanding with unclear explanations	Significant misconceptions
Communication & Clarity	Response is clear, organized, and engaging (spoken or written)	Mostly clear and coherent	Somewhat disorganized or hard to follow	Difficult to understand or off-topic
Use of Vocabulary	Uses 3–4 key terms correctly and appropriately	Uses 2–3 terms correctly	1 term used or partially correct	No appropriate vocabulary used
Reflection Depth	Provides thoughtful, meaningful insights with evidence of personal engagement	Reasonable reflection with some detail	Surface-level response	Minimal or off-topic reflection

Total Score: /16