Exploring Redox Reactions: Nature's Chemistry

Objective: Be able to identify and explain four naturally occurring redox reactions, write their balanced chemical equations, and illustrate them through photographs and drawings.

Directions: With your group, research four naturally occurring redox reactions, such as the rusting of iron, photosynthesis, respiration, and the corrosion of metals. Create a poster display that includes (1) the balanced equations for these reactions, (2) a written description for each reaction, and (3) a colorful graphic that represents each reaction.

i) Learners will work in small groups to research four naturally occurring redox reactions or redox reactions that are useful for humans. They will write the equations for these reactions on poster boards (and use half-reaction methods to balance them for Honors/AP classes).
ii) Learners model their reactions with photographs and drawings
iii) Gallery Walk: Display posters around the room. Students take a gallery walk, traveling in small groups. Teacher should assign a time limit and announce when groups should move to the next piece in the exhibit. Students leave feedback on the posters they visit (one feedback per person or per team - teacher's choice). Give original teams time to revisit the feedback and incorporate any feedback or ask questions if they choose.

Evaluation Rubric:

Criteria	3 - Excellent	2 - Satisfactory	1 - Needs Improvement
Title	Clear, creative title that reflects the content of the poster.	Title is present but lacks creativity or clarity.	No title or title is unclear.
Identification of Reactions	Four naturally occurring redox reactions are accurately identified and explained.	Three reactions are identified; explanations may lack detail.	Fewer than three reactions identified or poorly explained.
Balanced Chemical Equations	All balanced chemical equations are correct and clearly presented.	Most equations are balanced but may contain minor errors.	Many errors in equations; not balanced or unclear.
Illustrations	Colorful graphics and photographs effectively represent each reaction; all visuals are relevant.	Some graphics are relevant, but may lack color or clarity.	Few or no illustrations; visuals are unrelated or missing.
Effort and Creativity	Demonstrates exceptional effort and creativity; the poster is visually appealing and well-organized.	Acceptable effort and creativity; some organization evident.	Limited effort and creativity; poster appears disorganized.