CATAPULT PRESENTATION CHOICE BOARD

PRESENTATION FORMAT: CHOOSE 1 THE "LAUNCH & LEARN" STYLE	Create a physical or digital display board. Include sections for design, hypothesis, experimental setup, data (with charts), results, and conclusion. Prepare to explain each section verbally.	If feasible, demonstrate your catapult. Use a digital presentation (e.g., Google Slides) for data charts, design explanation, and conclusions. Include photos/videos of launches.	Create a 3-5 minute video. Include footage of design, construction, and launches. Integrate data charts and a clear voice-over explaining design, data, and conclusions.
NECESSARY INFO: PART 1 CHOOSE 1 THE "DATA DEEP DIVE"	Present at least three distinct data charts comparing mass and distance and charts explaining the relatioinship between kinetic energy, mass, and speed and the relationship between force, mass, and acceleration(e.g., bar graph, scatter plot, line graph). Explain trends, outliers, and what each chart reveals.	Present data charts. Explain how these statistics support your conclusions about mass and distance, kinetic energy, mass, and speed, and force, mass, and acceleration.	State a hypothesis about mass vs. distance and a hypotheesis about kinetic energy, mass, and speed as well as a hypothesis about force, mass, and acceleration before presenting results. Compare actual results to your prediction. Discuss why predictions were accurate or inaccurate, linking to design/experimental conditions.
NECESSARY INFO: PART 2 CHOOSE 1 THE "DESIGN & DISCOVERY" SPOTLIGHT	Provide detailed diagrams or schematics of your catapult, labeling components and materials. Explain the function of each part and how they work together. Discuss design choices and their intended impact.	Share your design process, including initial sketches, prototypes, and modifications. Discuss construction challenges and how you overcame them. Explain how design changes impacted performance.	Focus on the materials you chose and why (strength, flexibility, cost). Explain the physics principles at play (leverage, potential energy, projectile motion) in student-friendly terms.
NECESSARY INFO: PART 3 CHOOSE 1 THE "CONCLUSION & BEYOND" REFLECTION	Summarize key findings. Discuss major successes and challenges. Propose at least two specific improvements to your catapult or experiment for the future.	State your main conclusion. Discuss any unanswered questions or new hypotheses that arose. Suggest future experiments that could build upon your findings.	Summarize findings. Discuss how the principles learned apply to real-world engineering or physics concepts (e.g., trebuchets, sports equipment, space launches).

PRESENTATION RUBRIC

Category	4: Exemplary	3: Proficient	2: Developing	1: Beginning	0: Not Evident
Catapult Design	Provides a comprehensive, clear, and highly engaging explanation of the catapult's materials, features, and mechanism. Design choices are thoroughly justified with scientific principles.	Clearly explains the catapult's materials, features, and mechanism. Design choices are generally justified.	Describes most materials and some features, but the mechanism or rationale for design choices is unclear or incomplete.	Lists some materials but provides little to no explanation of design, features, or mechanism.	No description or explanation of the catapult design is provided.
Data Analysis	Presents data (mass, distance for 3 balloons) clearly and accurately using appropriate and highly effective visuals/methods for the chosen format. Data is thoroughly analyzed, interpreted, and trends are explicitly and insightfully discussed.	Presents all needed data clearly and accurately using appropriate visuals/methods for the chosen format. Data is analyzed, interpreted, and trends are discussed.	Presents some data, but either didn't include some needed data or visuals/methods may be unclear or inaccurate, or not fully appropriate for the format. Analysis and interpretation of trends are superficial or incomplete.	Data is presented in a disorganized or inaccurate manner, or is incomplete. Little to no analysis or interpretation is provided.	No data is presented or analyzed.
Conclusion	Offers a profound and insightful summary of findings, challenges, successes, and highly creative/feasible future improvements directly supported by evidence.	Provides a clear summary of findings, challenges, and successes. Offers relevant and feasible suggestions for future improvements.	Summarizes some findings, challenges, or successes but lacks depth or clarity. Future improvements are vague or impractical.	Attempts a conclusion, but it is unclear, incomplete, or does not address findings, challenges, or improvements adequately.	No conclusion is provided.
Presentation Quality	Chosen format is executed with exceptional professionalism, creativity, and attention to detail. All content is well-organized, easy to follow, and highly engaging. Meets all specific requirements of the chosen format (e.g., time limits, word counts, visual clarity).	Chosen format is executed professionally and clearly. Content is well-organized and easy to follow. Meets most specific requirements of the chosen format (e.g., time limits, word counts, visual clarity).	Chosen format shows some effort, but organization is lacking, clarity is sometimes an issue, or key requirements of the chosen format are not met.	Chosen format is disorganized, unclear, or incomplete. Many specific requirements of the chosen format are missing or poorly addressed.	Presentation is incomplete, unintelligible, or not submitted in the chosen format.
Clarity & Cohesion	The entire presentation is exceptionally clear, logical, and flows seamlessly. All parts are connected, demonstrating a deep understanding of the project as a whole and the interrelationships between design, data, and conclusions.	The presentation is clear, logical, and generally cohesive. Most parts are connected, showing a good understanding of the project and its components.	The presentation has some clear sections but lacks overall logical flow or cohesion. Connections between parts of the project are weak or not fully evident.	The presentation is difficult to follow, illogical, or fragmented. Connections between project parts are largely absent, making it hard to understand the overall purpose.	The presentation lacks any discernible structure or coherence.