NAME_____

Stage 2 Physics

Practical Investigation: Range of a Projectile

The aim of this task is to investigate the effect of launch angle on the range of a projectile.

Phase 1: Design

- Hypothesis
  - Derive a hypothesis describing the effect changing the launch angle will have on the range, assuming all other factors are held constant.
- Equipment
  - Think about how the experiment can be carried out, and become familiar with any available equipment, such as the projectile launcher and measuring tape.
  - Write a list of the equipment needed to carry out the experiment.
- Procedure
  - Draw a diagram of how the equipment should be set up.
  - Write a method. It should be clear, numbered, and step-by-step.
- Results
  - Draw up a results table. This will be filled in as the experiment is performed.

Hand in the design for feedback.

Carry out the experiment, filling out the results table and recording observations.

Phase 2: Report

- Manipulation and Collaboration
  - Discuss how you cooperated to take measurements carefully and safely, and how any challenges were overcome.
- Results and Calculations
  - Discuss the independent and dependent variables and factors held constant.
  - Perform any calculations necessary to get the data into a form that could be used to support the hypothesis.
  - Plot a clearly labelled graph of the results, including a line of best fit.
- Discussion
  - Discuss possible sources of random and systematic error and any effects shown by the data.
  - Evaluate the experimental procedure, suggesting improvements.
- Conclusion
  - Formulate a relevant conclusion based on the hypothesis.
  - Summarise key points from the discussion.