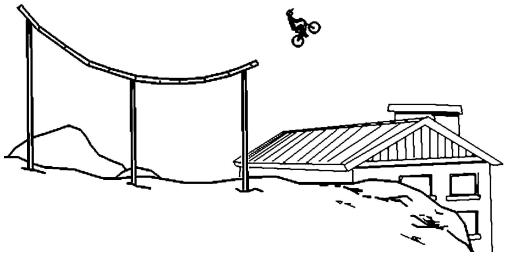
NAME_____

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
  - Identify the independent and dependent variables, factors held constant, and factors that may not be able to be controlled.
  - Derive a hypothesis describing the effect changing 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.
  - Include justification for the design of your method.
- Results
  - Draw up a results table. This will be filled in as the experiment is performed.

Hand in the design for marking.

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
  - Plot a clearly labelled graph of the results, including a line of best fit.
  - Include any calculations used during analysis of results.
- Discussion
  - Analyse the results, identifying trends, and linking results to concepts.
  - Evaluate the experimental procedure and effects on data, identifying sources of uncertainty.
- Conclusion
  - Formulate a relevant conclusion based on the hypothesis, with justification.