



In Achievement Standard: **90935** (Version **3**)
Credits: **4**

Subject Reference: **Physics 1.1**
Year: **2022**

Carry out a practical physics investigation that leads to a linear mathematical relationship, with direction.

Student Name: _____

Achieved	
	Correct independent & dependent variable stated or inferred from results
	Used data range for independent variable including 4 or more different points
	Collected 4 or more measurements for dependent variable
	Units are stated correctly for independent & dependent variable (found somewhere in paper)
	Develop a method for collecting the data - includes steps or a reasonable description of how experiment was carried out
	Measurements obtained are reasonably accurate (see moderated answer sheet)
	Graph data correctly plotted -- dependent on on y axis independent on x axis (1 error accepted)
	Graph line does NOT have to be a straight line
	Graph axis correctly labelled variable name & unit
	Use acceptable data range for Independent variable
	Conclusion links the data to the identified trend on the graph - has indicated that as independent increases dependent will also increase
Merit	
	Used techniques to increase accuracy eg <ul style="list-style-type: none">• Averaged data• Correction errors eg parallax and/ or zero error - if applicable
	Identified & described controlled variables that could a significant effect on the results
	Drawn a linear graph that is valid for the data
	Drawn a straight line on the graph that best fits the plotted points
	Written a conclusion that states the equation of the relationship
	Explained the equation in terms of its variables rather than x and y
Excellence	
	Written a discussion that validates the conclusion: (at least TWO from the following – Moderator's report)
	<ul style="list-style-type: none">• Justify the accuracy- improving techniques and how these made the measurements more reliable NOT limitation of equipment
	<ul style="list-style-type: none">• Justify the min and max independent values
	<ul style="list-style-type: none">• Justify why a variable needs to be controlled
	<ul style="list-style-type: none">• Describe any difficulties encountered when making measurements and how these difficulties were overcome
	<ul style="list-style-type: none">• Link between investigation findings and applicable physics ideas
	<ul style="list-style-type: none">• Describe any unexpected outcomes of the processing of the results and how these could affect the validity of the conclusion