

Year 9 Assessment - Matariki

Task:

Use the data below from our Sphero experiment, that we used to model travelling to different planets.

Distance (m)	Time (s)
1	1.1
2	1.7
3	2.4
4	3
5	3.3
6	3.7
7	4.8
8	5
9	5.5
10	6

- 1) Plot the points on the x and y axis.
- 2) Draw the best fit line.
- 3) Calculate the gradient and find the y-intercept of the straight line.
- 4) Write the equation of the straight line graph
- 5) Describe and discuss how the gradient relates to the distance/time graph you have drawn and how it can change.

The discussion(s) of the gradient will determine your final grade.

Show all your working.

Te whakaata pūāhua | Representing situations

Phase 4(9-10)

I KNOW:

- The properties of operations (commutative, distributive, associative, inverse, and identity) apply to numbers and variables.
- There is an order of operations when using numbers and variables.
- Functions can be expressed as algebraic equations, XY graphs, tables, or in words.
- There are many different, equivalent equations for expressing a linear function.
- Algorithms can be efficient or inefficient. More efficient algorithms have fewer steps.

Criteria	Working TOWARDS	Working AT	Working ABOVE	Working BEYOND
Patterns	You have shown some understanding of expressing functions arising from linear and simple quadratic patterns on <i>[Context]</i>	You have shown an understanding of expressing functions arising from linear and simple quadratic patterns on <i>[Context]</i>	You have shown a strong understanding of expressing functions arising from linear and simple quadratic patterns on <i>[Context]</i>	You have shown a comprehensive understanding of expressing functions arising from linear and simple quadratic patterns in <i>[Context]</i>
Linear graph	You have shown some understanding of graphing linear functions and	You have shown an understanding of graphing linear functions and interpreting the	You have shown a strong understanding of graphing linear functions and	You have shown a comprehensive understanding of graphing linear functions and

	interpreting the gradient in relation to the function or the practical situation represented on <i>[Context]</i>	gradient in relation to the function or the practical situation represented on <i>[Context]</i>	interpreting the gradient in relation to the function or the practical situation represented on <i>[Context]</i>	interpreting the gradient in relation to the function or the practical situation represented in <i>[Context]</i>
Simplifying Expressions	You have shown some understanding of <i>substituting into, rearranging and simplifying expressions</i> on <i>[Context]</i>	You have shown an understanding of <i>substituting into, rearranging and simplifying expressions</i> on <i>[Context]</i>	You have shown a strong understanding of <i>substituting into, rearranging and simplifying expressions</i> on <i>[Context]</i>	You have shown a comprehensive understanding of <i>substituting into, rearranging and simplifying expressions</i> in <i>[Context]</i>
Form and solve expressions and equations	You have shown some understanding of creating or using a formula, rule, equation, or inequality, solve for unknowns, and evaluate by substitution on <i>[Context]</i>	You have shown an understanding of creating or using a formula, rule, equation, or inequality, solve for unknowns, and evaluate by substitution on <i>[Context]</i>	You have shown a strong understanding of creating or using a formula, rule, equation, or inequality, solve for unknowns, and evaluate by substitution on <i>[Context]</i>	You have shown a comprehensive understanding of creating or using a formula, rule, equation, or inequality, solve for unknowns, and evaluate by substitution in <i>[Context]</i>
Overall Grade	Working TOWARDS	Working AT	Working ABOVE	Working BEYOND