

## ABOUT THE STANDARD

- ◆ The exam will be largely based on going between the three ways of representing a mathematical relationship; ie table  $\longrightarrow$  graph, equation  $\longrightarrow$  graph, graph  $\longrightarrow$  table etc.
- ◆ Background knowledge in algebra, geometry and arithmetic (fractions etc) is required for this standard.

## STRATEGIES FOR SUCCESS

### ◆ Stress the Small details

- ◆ The **x axis** is horizontal: (x is a cross  $\longleftrightarrow$ ), the **y axis** is vertical: (y to the sky  $\updownarrow$ ). **Coordinates** are (x, y). A line crosses the **x axis** at the **x-intercept**, and a line crosses the **y axis** at the **y-intercept**. Two lines cross at an intersection.
- ◆ **Discrete Data** is data based on counting and can only take certain values; ie the number of people in a room.
- ◆ **Continuous Data** can take any value and can't always be counted; ie the volume of fluid in a container in litres.
- Other terms to know: gradient, turning point, maximum, minimum, parallel, consecutive, straight, curve, translate, stretch.

◆ **An equation is term = term.** You will get marked down for having no '=' sign

◆ **Know what Different Graph types look like.** Three graph types: *exponentials, linear graphs and parabolas*. Use a graph drawing tool to experiment with this such as [graphsketch.com](https://www.graphsketch.com).

Graph types vary in how they look, concave down + up parabola for example.

◆ **Pay Attention to the Constants in your equations.** Often equation constants can be found with less effort and more accurately by observing the graph rather than subbing in points. ie any plus c constant is simply the  $\square$  intercept for a linear graph.

Know how to sanity check your constants. Ie, if the 'a' term in your  $y = a(x + b)(x + c)$  equation is negative, and the parabola you are modelling is concave up, you've gone wrong somewhere.

◆ **Sub in the best points you have.** Approximate points = Approximate equation = lost marks

◆ **Practice graphing.** Don't think you can get away with having a messy graph. Marker will check for slope, correct intercepts, accuracy etc.

◆ **Be able to Apply your Skills for the Real Life Scenarios.** You have to think about what real life variables you are showing a relationship between. Ie for a graph the variable on your x axis could be time and the variable on your y axis could be height.

- ◆ Avoid values that make no sense in the context, ie negative time values
- ◆ Use symbols that correlate to the variables you are describing a relationship between instead of just using x and y. The same goes for labelling axis of your graph. Write down what each symbol means beforehand for clarity. For Example: for a linear system of height vs time ( $H = \text{height}, t = \text{time}$ )  $H = 2t + 1$  good,  $y = 2x + 1$  bad.

◆ **Know how to graph Discrete Data as well as Continuous.** If you are describing a discrete variable on your

graph ie number of rabbits in a field, a line shouldn't be used when graphing, only dots at the points where the data is present. A line is only used for continuous variables which could take any value.

## OVERALL

- ◆ Your success in this paper will largely depend on how much you stress the details; clear working, correct terminology, and accurate graphs are really key areas to stay on top of.
- ◆ Always remember the wider applications of the models you are working with, they're not always just math, they can be used to describe real world relationships.
- ◆ We've covered some core strategies and things to remember, but we haven't covered everything.
- ◆ As we said at the start of this video, we really recommend going through the last 3-4 years of exam papers, and also using the StudyTime Walkthrough Guide and Checklist to really check and consolidate your knowledge and feel 100% prepared!