Year: Sixth Form
Subject: Pearson Edexcel IAL Mathematics – Statistics 1

Please note this curriculum map is based on 2 hours of teaching time per week.

Term	Week	Focus	Summary	Learning Outcomes	Parental Support	Independent Learning
1A	1	Mathematical Modelling	An introduction to the course aimed at developing an understanding the sorts of scenarios where a statistical model will be useful.	To understand what mathematical modelling is. To design a simple mathematical model.	Chapter 1 video walk through.	Full Chapter 1 PPT Chapter Notes Full chapter 1 video lesson S1 E Book
	2	Measures of Location and Spread	Calculating Measures of location and spread and developing the ability to interpret them in context. Not using interpolation at this point	To be able to recognise different types of data To be able to calculate measures of central tendency such as the mean, median and mode. To be able to use interpolation to estimate the median of grouped data	2.2 Measures of Central Tendency video lesson 2.3 Other measures of location and linear interpolation video lesson	Full Chapter 2 PPT (see 2.1 2.2, and 2.3 for this week's content) S1 E Book Full chapter 2 video lesson
	3	Measures of location and spread	In this week's lessons we move on to measure of location and spread including introducing interpolation to find quartiles and median of grouped data	Be able to calculate the median and percentiles using interpolation when working with grouped data Calculate measures of spread such as range, interquartile range, and interpercentile range	2.4 Measures of spread video lesson 2.5 Variance and Standard Deviation video lesson	Full Chapter 2 PPT (see 2.4 and 2.5 for this week's content) S1 E Book Full chapter 2 video lesson
	4	Measures of location and spread	This week pupils are introduced to the concept of 'coding' data to make it easier to work with. At the	Be able to use coding to simplify statistical calculations. Know how coding affects statistical answers and how to	2.6 Coding video lesson	Full Chapter 2 PPT (see 2.6 for this week's content) S1 E Book

			end of the week they will sit their first end of topic test	adjust the answers of coded data to solve problems		Full chapter 2 video lesson
	5	Representations of Data	The start of a topic on representation of data which this week has a focus on drawing and interpreting histogram and introduces methods of formally identifying an outlier	To Draw and interpret Histograms To be able to identify outliers using a method stated in the question Understand how to 'clean' data clearly stating the rationale behind removing data values.	3.1 Histograms video lesson (from 53:13 onwards) 3.2 Outliers video lesson (from 26:52 onwards)	Full Chapter 3 PPT (see 3.1 and 3.2 for this week's content) S1 E Book Full chapter 3 video lesson
	6	Representations of Data	In this weeks lessons pupils will learn how to draw and interpret box plots. They will then use them to compare the distribution of two data sets. They will also recap how to draw a stem and leaf diagram.	Be able to draw and interpret box plots by calculating a 5 figure summary (Min, Max, Median, UQ and LQ. Use box plots to be able to compare the distribution of two data sets Learn how to draw a stem and leaf diagram and use this to find a '5 figure summary'.	3.3 Box Plots video lesson 3.4 Stem and Leaf Diagrams video lesson	Full Chapter 3 PPT (see 3.3 and 3.4 for this week's content) S1 E Book Full chapter 3 video lesson
	7	Representations of Data	This week we focus on understanding the shape of data by visually and formally identifying the skewness of a set of data. We spend the second lesson of the week using our learning from this chapter to compare data sets in a range of contexts	To understand what 'Skewness' is and be able to identify it visually. Calculate 'Skewness' using the formula and interpret the result. Be able to compare data sets by commenting on a measure of location and a measure of spread.	3.5 Skewness video lesson	Full Chapter 3 PPT (see 3.5 and 3.6 for this week's content) S1 E Book Full chapter 3 video lesson
	8	Consolidation and End of half term test	This week we will practice exam questions involving a combination of the skills			

			learnt so far and conduct an End of Half term test.			

Term	Week	Focus	Summary	Learning Outcomes	Parental Support	Indenpendant Learning
1B	9	Probability	This topic starts by introducing some of the probability vocabulary pupils will need at A Level study including language involving the regions of Venn Diagrams.	To be able to Draw a sample space diagram Learn how to apply our knowledge of interpolation to estimate probabilities from grouped data Use the correct language to describe regions of a Venn Diagram To find probabilities by drawing a Venn Diagram	4.1 Sample Space Diagram video lesson 4.1 Interpolation to estimate probabilities from grouped data video lesson 4.2 Venn Diagram video lesson	Full Chapter 4 PPT (see 4.1 and 4.2 for this week's content) S1 E Book Full Chapter 4 video lesson
	10	Probability	In the second week of our probability topic we move on to looking at mutually exclusive and independent events. In the second part of the week pupils are introduced to how to read A Level standard set notation	To understand the concept of mutually exclusive and independent events in context To be able to determine whether or not two events are independent or not using the fact that for independent events P(A and B) = P(A) × P(B) Understand and Interpret Set Notation	4.3 Mutually exclusive and independent events video lesson 4.4 Set Notation video lesson	Full Chapter 4 PPT (see 4.3 and 4.4 for this week's content) S1 E Book Full Chapter 4 video lesson
	11	Probability	This week pupils will apply the skills they have learnt so far in this chapter to situations involving conditional probability	Understand and use conditional probability Be able to solve problems involving conditional probability in Venn diagrams	4.5 and 4.6 Conditional Probability video lesson including in Venn diagrams	Full Chapter 4 PPT (see 4.5 and 4.6 for this week's content) S1 E Book

			including 'Given that' questions.			Full Chapter 4 video lesson
	12	Probability	Over the next 2 lessons pupils learn how to apply the addition formula for two events to link the probability of the union to the probability of the intersection.	Be able to use and apply the addition formula Use a tree diagram to show the outcomes of two events happening in succession.	4.7 Probability formulae video lesson 4.8 Harder Tree Diagrams video lesson	Full Chapter 4 PPT (see 4.7 and 4.8 for this week's content) S1 E Book Full Chapter 4 video lesson
	13	Review Exercise	This week pupils will complete a review exercise under exam conditions covering chapters 1 – 4 to assess their progress.			S1 E Book
	13	Correlation and Regression	At the start of this chapter pupils refresh their knowledge of scatter graphs and the concept of correlation. Their knowledge is then extended through learning how to use the regression line to make predictions	Be able to draw and interpret scatter diagrams Decide visually if there is a relationship between variable. Use and interpret linear regression.	5.1 Recap of Scatter Diagrams and Correlation video lesson 5.2 Linear Regression video lesson	Full Chapter 5 PPT (see 5.3 for this week's content) S1 E Book Full Chapter 5 video lesson
	14	Correlation and Regression	The second week of this topic introduces pupils to how to calculate the least square regression line for themselves.	Be able to identify bivariate data Calculate the equation of the least squares regression line using raw data. Use the summary statistics to me efficiently calculate the least squares regression line	5.3 Calculating the regression line video lesson	Full Chapter 5 PPT (see 5.3 for this week's content) S1 E Book Full Chapter 5 video lesson
	15	Correlation and Regression	At the start of this week pupils will learn how to calculate the original	Be able to find the regression line of an original data set given		Full Chapter 5 PPT (see 5.3 for this week's content) S1 E Book

			regression line from the coded data's regression line	the regression line from coded data.		Full Chapter 5 video lesson

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2A	16	Correlation and Regression	This week pupils will be introduced to the product moment correlation coefficient (PMCC) and how it can be used to measure correlation between two variables.	To understand how the PMCC is used to measure correlation. To be able to calculate PMCC from a table of values. Be able to calculate PMCC using a calculator	How to calculate PMCC using a calculator Casio fx-83GT CW Casio fx – 83gtx (Older style)	Full Chapter 5 PPT see first few slides of 5.4 for this weeks content) S1 E Book
	17	Correlation and Regression	Over the next two lessons pupils will learn how to find the PMCC given the summary statistics. And interpret the PMCC in context	To be able to find the PMCC given the summary statistics S_{xx} , S_{yy} and S_{xy} Understand how to describe and interpret the PMCC in context	PMCC video lesson	Full Chapter 5 PPT (see 5.4 for this week's content) S1 E Book Full Chapter 5 video lesson
	18	Correlation and Regression	The final week on the topic of Correlation and Regression where pupils will learn how coded data effects the PMCC and how to uses coded data to calculate the original data's PMCC	Be able to solve problems involving the PMCC and coded data in context.	PMCC and coding video lesson	Full Chapter 5 PPT (see 5.4 for this week's content) S1 E Book Full Chapter 5 video lesson
	19	Discrete Random Variables	An introduction to discrete random variables and describing the Probability function of an event.	Understand what discrete random variables are and how they arise	Introduction to discrete random variables video lesson	Full Chapter 6 PPT (see 6.1 and 6.2 for this week's content) S1 E Book

				Be able to identify examples of a discrete random variable. Find the cumulative distribution function for a discrete random variable	Cumulative distribution function for a discrete random variable lesson	Full Chapter 6 video lesson
	20	Discrete Random Variables	This week pupils will focus on finding the expected value of a discrete random variable	Know that the expected value of the discrete random variable X is denoted as E(X) Be able to calculate the expected value of a discrete random variable	Calculating the expected value of a random discrete variable video lesson	Full Chapter 6 PPT (see 6.3 for this week's content) S1 E Book Full Chapter 6 video lesson
	21	Discrete Random Variables	In the next two lessons pupils further develop their knowledge of working with discrete random variables by learning how to calculate the variance.	To be able to find the variance of a discrete random variable To be able to interpret the variance of a discrete random variable by understanding that the larger the value of Var(X) the more likely values are to differ from the expected value	Variance of a discrete random variable video lesson	Full Chapter 6 PPT (see 6.4 for this week's content) S1 E Book Full Chapter 6 video lesson
	22	Discrete Random Variables	Over the next two lesson pupils will learn how to apply their knowledge of finding the expected value an variance of a discrete random variable to a function of that variable.	To be able to find the expected value and variance of a function of X. Be able to notice that applying a function to X is a form of coding and make links to other parts of the course involving coded data.	Expected value and variance (and how this is a form of coding) video lesson	Full Chapter 6 PPT (see 6.5 for this week's content) S1 E Book Full Chapter 6 video lesson

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2B	23	Discrete Random Variables	This week we look at how to solve problems involving random variables. Then move on to look at discrete uniform distribution as a model of the outcomes of certain experiments	Given two random variables where one is a function of the other. Use the mean and variance of the function to find the expected value and variance of the original random variable. Be able to apply our knowledge from this unit in context to real life experiments	Discrete uniform distribution video lesson	Full Chapter 6 PPT (see 6.6 for this week's content) S1 E Book Full Chapter 6 video lesson
	24	The Normal Distribution	In our final topic of the 'Statistics 1' unit pupils learn the 'Normal Distribution'. This week pupils are introduced to the normal distribution curve and its characteristics.	Understand the notation used to denote normal distribution $X \sim N(\mu, \sigma^2)$ Use the properties of the normal distribution curve to solve problems. Learn the 68, 95, 99.7 rule and use this to solve problems involving the distribution of data around the mean.	Introduction to Normal Distribution video lesson	Full Chapter 7 PPT (see 7.1 for this week's content) S1 E Book Full Chapter 7 video lesson
	25	The Normal Distribution	Our lessons this week focus on using calculating probabilities using the properties of 'Standard Normal Distribution' and its associated table of values.	Understand that data with standard normal distribution has a mean of 0 and a standard deviation of one. $Z \sim N(0, 1^2)$	Using Probability tables video lesson	Full Chapter 7 PPT (see 7.2 and 7.3 for this week's content) S1 E Book

				Use the standard distribution table to find the probability a variable chosen a random is a given number of standard deviations away from the mean Be able to find the value of z, given the probability of an event happening		Full Chapter 7 video lesson
	26	The Normal Distribution	Pupils build on their knowledge of 'Standard Normal Distribution' by learning how to standardize normally distributed variables so they can be modelled using 'Standard Normal Distribution	Be able to standardize normally distributed variables so problems can be solved using the standard normal distribution tables Know that the formula use to 'standardise' normally distributed variables is $Z = \frac{X-\mu}{\sigma}$	Standardizing video lesson	Full Chapter 7 PPT (see 7.4 for this week's content) S1 E Book Full Chapter 7 video lesson
	27	The Normal Distribution	This week pupils learn how to find an unknown mean of standard deviation for a normally distributed variable	To be able to use the Standard Normal Distribution table to find the mean or standard deviation of a set of normally distributed data.	Find the missing mean or standard deviation video lesson	Full Chapter 7 PPT (see 7.5 for this week's content) S1 E Book Full Chapter 7 video lesson
	28	Review Exercise	Pupils complete a review exercise covering all content covered in this unit. Any knowledge that requires re teaching to be taught in lesson 2			
	29		Full Mock Exam			

Term	Week	Focus	Summary	Learning Outcomes	Parental Support	Indenpendant Learning
3A						

Term	Week	Focus	Summary	Learning Outcomes	Parental Support	Indenpendant Learning
3B						
