Islip Manor High School
Scheme of Learning Overview

Islip Manor
HIGH SCHOOL

This scheme of learning has been designed to ensure that you make progress, develop, and master key knowledge, skills, and ideas through academically rich content that reflects, values, and celebrates the diverse experiences, identities, and contributions of our school community.

Year group: 8	**Term**: Summer	**Unit duration:** 4 weeks
Unit assessment: End of Unit Assessment		

Unit title: **STATISTICS 2**

Charts and Graphs

Fertile question: Do taller people have bigger feet?

Key skills/concepts/knowledge that students should cover	**Start RAG**	**End RAG**
• Construct and interpret appropriate charts and diagrams, including bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data • Describe, interpret and compare observed distributions of a single variable through appropriate graphical representation involving discrete, continuous and grouped data • Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs		

Stretch. Key skills/concepts/knowledge that students should cover

- Use and interpret scatter graphs of bivariate data; recognise correlation and know that it does not indicate causation; draw estimated lines of best fit; make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of doing so

Literacy. Key vocabulary/subject terminology that students should cover:

Revision	Core	Enhanced
Chart Diagram Bar Chart Pictogram Prediction	Pie chart Line of Best fit Correlation Scatter Graphs Categorical data Numerical data	Interpolate Extrapolate Bivariate data Discrete Continuous

Suggested materials teachers could/should use:
Mathsbox, corbettmaths, mathsgenie, DrAustinMaths
Mini whiteboards

Key home learning tasks students should complete:
SPARX Maths

Keyword definitions

- **Scatter Graph**

  A scatter graph (or scatter plot) is a type of graph that shows pairs of numbers as dots on a grid. It helps you see if there is a relationship (or pattern) between two things.

  Example:

  If you make a scatter graph of:

  Hours studied vs test scores
  Each dot shows one student's hours and their score.
  If the dots go up in a pattern, it shows that more studying = higher scores (a positive correlation).Scatter graphs are great for spotting trends, patterns, or seeing if two things are connected.

- **Correlation:**

  Correlation in math means how two things are related to each other. If one thing changes, does the other change too? For example, if you study more, your grades might go up — that's a positive correlation. If you watch more TV and your grades go down, that's a negative correlation. If they don't affect each other at all, there's no correlation.

- **Categorical data:**

  This is information that is sorted into groups or categories. These categories are **names or labels**, not numbers.

  Examples:

  - **Favorite color** (like red, blue, green)
  - **Type of pet** (dog, cat, fish)
  - **School house/team name** (Eagle, Tiger, Lion)

- **Yes or No answers** (like "Do you like pizza?")

- **Extrapolate**

  Extrapolate means using what you already know to guess what might happen outside the data you have.

  Example:

  Imagine you're tracking how tall a plant grows each week.

  - Week 1: 5 cm
  - Week 2: 10 cm
  - Week 3: 15 cm

  You can extrapolate and guess that in Week 4, the plant might be 20 cm tall — even though you haven't measured it yet.

  So, extrapolating is like continuing a pattern to make a smart guess about the future or something you haven't seen yet.

- **Interpolate**

  Interpolate means using what you already know to make a good guess about something in between known points.

  Example:

  Let's say you know a plant's height:

  - Week 1: 5 cm
  - Week 3: 15 cm

You don't know Week 2, but you can interpolate and guess it was around 10 cm, since it's halfway between 5 and 15.

So, interpolating is like filling in the missing pieces inside the data you already have.

- **Discrete**

  Discrete data is data that can only take certain separate values. You can count them, and they don't have values in between.

  Examples:

  - Number of students in a class (you can't have half a student!)
  - Number of pets you have
  - How many goals were scored in a game

  You can't have 2.5 pets or 3.7 students — that's why it's called discrete, meaning it comes in clear, separate steps.

- **Continuous data**

  Continuous data is data that can have any value within a range. You can measure it, and it can include decimals or fractions.

  Examples:

  - Height of a person (like 150.5 cm)
  - Temperature (like 22.3°C)
  - Time taken to run a race (like 12.78 seconds)

  Continuous data can keep going with more and more detail, because there are no gaps between the values.