



Curriculum Links

KS3 Maths

	Brief Description	Equipment Includes	Centres			Curriculum Information
			PGL Little Canada	PGL Osmington Bay	PGL Winmarleigh Hall	Maths
Theme 1 - Algebra						
Wire Flyer	A zip wire session provides data including distance travelled and time taken in order to calculate speed using algebra.	Computer, clipboard, stopwatch, activity equipment: zip wire	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Interpret fractions and percentages as operators. Use standard units of mass, length, time. Use a calculator and other technologies. Change freely between related standard units. Use compound units such as speed. Construct and interpret appropriate tables, charts and diagrams for grouped and ungrouped data. Understand and use standard mathematical formulae and expressions, including scientific formulae. Substitute numerical values into formulae and expressions. Interpret mathematical relationships both algebraically and graphically.
Tower Time	Students use trigonometry to analyse data from their abseiling session and produce an annotated presentation of the activity.	Computer, clipboard, clinometer, measuring tape, activity equipment: abseiling	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Use the standard conventions for labelling the sides and angle of triangle ABC. Describe, sketch and draw using conventional terms and notations. Apply angle facts to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs. Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles. Understand and use standard mathematical formulae and expressions, including scientific formulae. Substitute numerical values into formulae and expressions. Interpret mathematical relationships both algebraically and graphically.
Theme 2 - Handling Data						
Heartbeat	A rope-based activity produces the opportunity to collect data which can then be turned into a presentation showing how pulse rates change during the activity.	Computer, clipboard, data logger with pulse sensor, activity equipment: rope-based activity	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Construct and interpret appropriate tables, charts and diagrams for grouped and ungrouped data. Order positive and negative integers, decimals and fractions. Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers). Construct and interpret appropriate tables, charts, and diagrams for grouped and ungrouped data.
Stock Take	Students prepare a proposal for a theoretical retail outlet using the PGL centre shop as a model and data source. Averages, charts and diagrams are employed to explain trends and patterns within the data.	Computer, clipboard	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Construct and interpret appropriate tables, charts and diagrams for grouped and ungrouped data. Order positive and negative integers, decimals and fractions. Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers). Construct and interpret appropriate tables, charts, and diagrams for grouped and ungrouped data.



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Theme 3 - Numbers and the Number System						
Aero Noughts	Data from an aeroball session, such as shots and goals, provides material for analysis in terms of ratios and percentages.	Computer, stopwatch, tally counter, activity equipment: aeroball	✓	✓		Understand and use place values for decimals, measures and integers of any size. Use ratio notation, including reduction to the simplest form. Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio. Understand the multiplicative relationship between two quantities can be expressed as a ratio or fraction.
Sports Report	Races and team games create contrasting data which students use to focus on percentage increase and decrease, fractions and ratios.	Computer, activity equipment: balls, cones etc.	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Use ratio notation, including reduction to the simplest form. Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio. Understand the multiplicative relationship between two quantities can be expressed as a ratio or fraction.
Theme 4 - Shape, Space and Measures						
Marker Trail	Based on an orienteering session, students explore angles and distances in order to design a shortest route.	Computer, maps, activity equipment: orienteering	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Use compound units such as speed. Use scale factors, scale diagrams and maps. Draw and measure line segments and angles in geometric figures, including interpreting scale drawings. Derive and use the standard ruler and compass constructions. Understand and use standard mathematical formulae and expressions, including scientific formulae. Substitute numerical values into formulae and expressions. Work with coordinates in all four quadrants.
Route Master	Plotting a walking route, students use GPS units for checking time and distance and learn to use angles as a checking tool.	Computer, GPS unit, maps, activity equipment: hiking	✓	✓	✓	Understand and use place values for decimals, measures and integers of any size. Use compound units such as speed. Use scale factors, scale diagrams and maps. Draw and measure line segments and angles in geometric figures, including interpreting scale drawings. Derive and use the standard ruler and compass constructions. Understand and use standard mathematical formulae and expressions, including scientific formulae. Substitute numerical values into formulae and expressions. Work with coordinates in all four quadrants.