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| **Year 2 pure unit 12: Vectors (3D)** | **Road Map** |
| In this unit you will learn about pure maths. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
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| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| **12. Use of vectors in three dimensions; knowledge of column vectors and i, j and k unit vectors** | be able to extend the work on vectors from AS Pure Mathematics to 3D with column vectors and with the use of **i**, **j** and **k** unit vectors; |  |  |  |
| be able to calculate the magnitude of a 3D vector; |  |  |  |
| know the definition of a unit vector in 3D; |  |  |  |
| be able to add 3D vectors diagrammatically and perform the algebraic operations of vector addition and multiplication by scalars, and understand their geometrical interpretations; |  |  |  |
| understand and use position vectors, and calculate the distance between two 3D points represented by position vectors; |  |  |  |
| be able to use vectors to solve problems in pure mathematics and in contexts (e.g. mechanics). |  |  |  |

**Links:**

LG1: You will learn how to use vectors including unit vectors in both column form and **I, j k** form in 3 dimensions.

LG2: You will be able to apply your knowledge of vectors to solve problems in both pure mathematics and in context.

LG3: You will be able to solve a variety of routine and non-routine problems, by combining several Mathematical skill sets. For example, using vectors to solve problems involving kinematics and force.