Half term 1

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| **What will be learning?****Teacher 1** Pure Chapter 5 – RadiansPure Chapter 6 – Trigonometric functionsPure Chapter 7 – Trigonometry and modelling**Teacher 2**Applied Chapter 1 – Regression, correlation and hypothesis testingApplied Chapter 2 – Conditional probabilityApplied Chapter 3 – The normal distribution | **Why this? Why now?**Radians and Year 2 Trigonometry are needed before looking at Parametric Equations and Year 2 Differentiation and Integration. | **Key Words:**  Sector SegmentcotseccosecarcsinarccosarctanCompound angleDouble angle Product moment correlation coefficientIntersectionUnionComplementContinuity correction |
| **Helpful hints**Make sure you learn your formulas for arc length and sector are…a or know how to work them out…they are not given in the formula booklet.Make sure you know your double angle formulas and tan, sec, cot and cosec equations linked to Pythagoras theorem… or know how to work them out…write them down at the beginning of any exam…they are not given in the formula booklet |
| **What opportunities are there for wider study?** Try being a Climate Scientist:<https://amsp.org.uk/resource/Estimating-and-reasoning>    Try being an Actuary:  <https://amsp.org.uk/resource/risk>   |
| **How will I be assessed?**  Topic test 1 (Pure Chapter 1, 3 and 4)Topic test 2 (Applied Chapter 1 and 2)Topic test 3 (Pure Chapter 2 and 5) |

Half term 2

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| **What will be learning?****Teacher 1** Pure Chapter 12 – VectorsPure Chapter 8 – Parametric equations**Teacher 2**Pure Chapter 9 – Differentiation | **Why this? Why now?**The Pure Year 2 Vectors work leads on to Year 2 Mechanics started next half term. | **Key Words:**  Unit vectorCartesian Domain RangeSmall anglesChain ruleProductQuotient ruleConcaveConvexPoint of inflection |
| **Helpful hints**Always use column vectors to do your workings instead of leaving in terms of I, j and k |
| **What opportunities are there for wider study?** See these applications of calculus in everyday life:<https://www.byjusfutureschool.com/blog/the-application-of-calculus-in-everyday-life/>  |
| **How will I be assessed?**   Topic test 4 (Pure Chapter 6, 7 and 12) Topic test 5 (Applied Chapter 3) |

Half term 3

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| **What will be learning?****Teacher 1** Applied Chapter 5 – Forces and FrictionApplied Chapter 6 – ProjectilesApplied Chapter 7 – Applications of forces (parts of)**Teacher 2**Pure Chapter 10 – Numerical methodsPure Chapter 11 – Integration (started) | **Why this? Why now?**Pulling everything Mechanics and Pure wise from the past 2 years together with Applications of Mechanics and Integration. | **Key Words:**  Coefficient of frictionHorizontal componentVertical componentConstant velocityConstant accelerationIterativeNewton-Raphson formula |
| **Helpful hints**Mechanics – a good diagram is key to succeed – make sure you have included all the relevant forces and split those that need to be in to parallel and perpendicular components through drawing a right-angled triangle. |
| **What opportunities are there for wider study?** Try working in Orthotics and Prosthetics:<https://amsp.org.uk/resource/angles-and-forces>  |
| **How will I be assessed?**   Topic test 6 (Pure Chapter 8 and 9) Topic test 7 (Applied Chapter 5, 6 and 7) Internal exams |

Half term 4

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| **What will be learning?****Teacher 1** Applied Chapter 8 – Further kinematicsApplied Chapter 4 – MomentsApplied Chapter 7 – Applications of forces (moments)**Teacher 2**Pure Chapter 11 – Integration | **Why this? Why now?**Pulling everything Mechanics and Pure wise from the past 2 years together with Applications of Mechanics and Integration. | **Key Words:**  Variable accelerationInitial conditionBoundary conditionUniformIntegration by substitutionIntegration by partsTrapezium rule |
| **Helpful hints**Moments at an angle – resolve horizontally and vertically and take moments about the awkward point – this should give you enough information to solve the problem.Remember the variable Acceleration diagram |
| **What opportunities are there for wider study?** Try aspiring to be an astronaut: <https://amsp.org.uk/resource/geometry-and-equations-of-motion> |
| **How will I be assessed?**   Topic test 8 (Applied Chapters 4 and 8) Topic test 9 (Pure Chapter 10 and 11) Mocks |