

Year Group: 12	Subject: Chemistry	Term: Summer 2021
Topic	Key Learning points	Assessment
<p>Further equilibrium</p>	<p><i>End Point: To understand the use of equilibrium constants, be able to calculate them and understand the factors affecting equilibrium constants.</i></p> <ul style="list-style-type: none"> • Deduce an expression for Kc for homogeneous and heterogeneous reactions • Use expressions for Kc to calculate its value and deduce the appropriate units • Deduce an expression for Kp for homogeneous and heterogeneous reactions • Use expressions for Kp to calculate its value and deduce the appropriate units • Describe and explain the effects of temperature on the position of equilibrium and therefore on the equilibrium constant for both exothermic and endothermic reactions • Explain why changes in concentration, pressure or addition of catalysts do not affect the equilibrium constant for a reaction 	<p>Students will be formatively assessed during each topic by past paper questions completed in lesson time.</p> <ul style="list-style-type: none"> • Students will complete homework assignments as ongoing assessment of understanding. • Teachers will provide students with targeted feedback, based on their test performance.
<p>Further kinetics</p>	<p><i>End Point: To understand how to identify orders of reactions and select appropriate experimental techniques for both continuous rate methods and initial rate methods.</i></p> <ul style="list-style-type: none"> • Understand the term "rate of reaction" • Be able to select and explain suitable practical techniques for obtaining rate data, e.g. evolved gas volumes, changes in mass, colourimetry, titrations, etc. • Be able to define the following terms; rate equation, order of reaction with respect to a substance within a rate equation, overall order of a reaction, rate constant, rate determining step, half-life, activation energy, homogeneous catalysis, heterogeneous catalysis, autocatalysis. • Recall the methods that can be used to investigate reaction rates • Be able to calculate; rate of reaction, half-lives. • Deduce the order with respect to a substance and for an overall reaction from: concentration-time graphs, initial rate methods, rate-concentration graphs. • Identify the rate determining step for a reaction from its rate equation • Deduce the reaction mechanism for a reaction from its rate equation and balanced symbol equation • Use the Arrhenius equation to explain the effect of temperature on a rate constant. • Use graphical methods to deduce the activation energy for a reaction from experimental data. 	<p>During this term students will complete their UCAS prediction exams, which will cover content from topics 1-10 from the book 1 textbook provided for the course.</p>