Reaction Order

Aims

This resource is intended for use by students to determine the order of a reaction with respect to various reactants. The concentrations of the reactants can be varied and their effect on reaction rate examined in order to determine order.

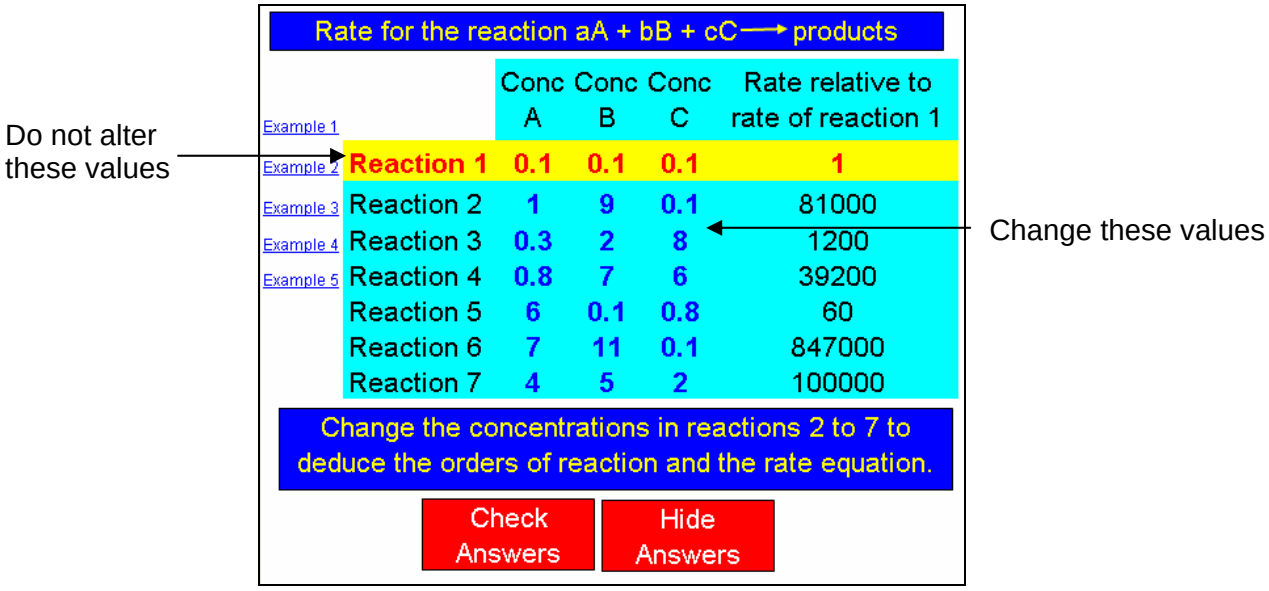
Prior Knowledge

Students should be familiar with writing rate equations, the concept of reaction order and the influence of altering concentration on the rate of reactions.

How to use the Spreadsheet

Five examples of reactions are provided as part of the spreadsheet. Each page of the sheet contains a different example.

Students can change the concentrations of the species taking part in reactions two to five. Reaction one must be left unaltered. As concentrations are altered the effect of this will be seen on the rate of the reaction relative to reaction one.



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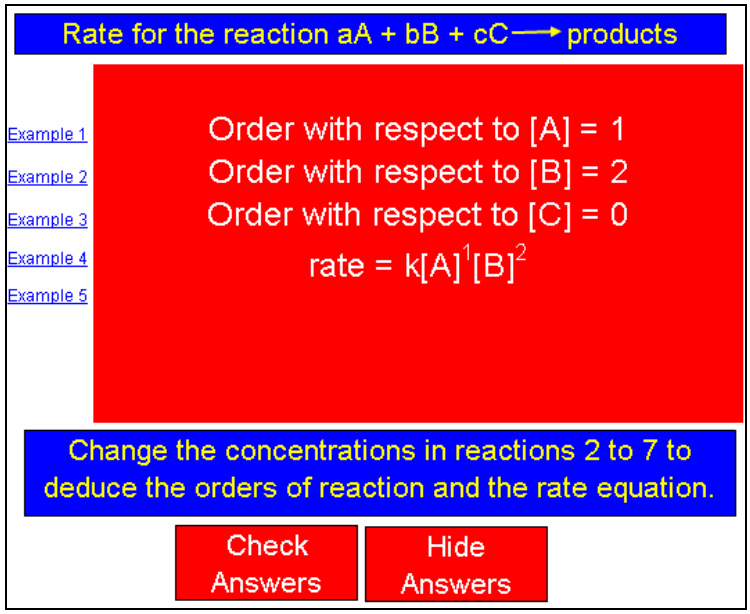
Through using the activity students will realise that they should only alter the concentration of one species at a time. Once they have written down the order of the reaction with respect to each of the species A, B and C and the rate equation the 'Check Answers' button should be selected in order to reveal the answer. ***These must be hidden again before moving on to the next example by selecting it from the left hand side of the sheet.*** On closing the spreadsheet any changes made to the sheet should not be saved.



Interactivity

This resource offers interactivity through revealing the answers to calculations using the 'Check Answers' button. Students can instant feedback as they control each of the concentrations by examining its effect on reaction rate. Use of an interactive whiteboard will allow constant values to be annotated by students as they use the resource.

Adapting the Resource

There are five examples provided as part of this spreadsheet. Colours and formatting of these examples can be easily carried out but adding extra examples is extremely difficult as there are calculations embedded into the spreadsheet which determine order.

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