

## Planning a catalysed reaction rate investigation – assessment grid

### Education in Chemistry

2018, Emily Seeber

rsc.li/2pX2oet

Plan an investigation into how different catalysts affect the rate of decomposition of hydrogen peroxide. Use the assessment grid to help you

	Poor	Adequate	Good	Excellent
<b>Organisation of ideas</b>	Ideas are disorganised and it is difficult to follow the practical method suggested.	There is a clear title. It is possible to understand the method intended. <b>(1 mark)</b>	There is a clear main title. The aim, diagram and method are separated and the method is clear and easy to follow. <b>(2 marks)</b>	The title gives the reader the key information about the plan. Aim, diagram and method are separated and labelled with sub-headings. The method is precise and concise. <b>(3 marks)</b>
<b>Diagram</b>	No diagram is provided.	The diagram is messy or drawn in pen. Labelling is incomplete. <b>(1 mark)</b>	The diagram is neatly drawn with a pencil and ruler. Labels are all correct. <b>(3 marks)</b>	The diagram clearly shows key information about how to carry out the practical. It complements the method given. <b>(4 marks)</b>
<b>Fair test</b>	Fair testing is mentioned vaguely, but no suggestions of how to improve this are given.	One suggestion for making the experiment fair is given. <b>(1 mark)</b>	Two or three suggestions for conducting a fair test are given. <b>(3 marks)</b>	Four or more distinct suggestions for carrying out a fair investigation are given. <b>(4 marks)</b>

<b>Method for comparing the rate of reaction</b>	The method is incomplete. A suggestion for how to compare rates of different reactions is not given.	The method described would work. At least two potential catalysts have been chosen. A <b>qualitative</b> method for comparing the rate of reaction is suggested. <b>(4 marks)</b>	The method described would work well. At least three potential catalysts have been chosen. A <b>quantitative</b> method for comparing the rate of reaction, such as measuring the decrease in mass or volume of oxygen produced, has been given. <b>(7 marks)</b>	The method described would work well and give <b>reliable</b> results. At least four potential catalysts have been chosen. The volume of oxygen is measured using a suitable method. <b>(8 marks)</b>
<b>Safety</b>	The method is unsafe.	The method is safe. <b>(1 mark)</b>	Suitable safety information is given. <b>(3 marks)</b>	Chemical safety information sheets have been used to research the potential hazards of the chemicals selected. <b>(5 marks)</b>
<b>Prediction</b>	No prediction is given.	A prediction is stated and explained. <b>(1 mark)</b>	A prediction is stated and the reasons for the prediction are explained in terms of particle collisions. <b>(4 marks)</b>	A prediction is stated and explained. Evidence of research into how using a catalyst affects the rate of reaction and a clear explanation in terms of collision theory are given. <b>(6 marks)</b>