

## Biology: Required Practical 4



- What is this required practical about?

- 
- Label the equipment above.

- What are your variables in this experiment:

- Independent: .....
- Dependent: .....
- Control (x3): .....

- Think about how you carried out this practical.

Write a logical and comprehensive method, using numbered bullet points.

Is your method good?  
Read it. If someone else  
could get results from it  
then yes!

<https://www.youtube.com/watch?v=7wJltifm9Ws>  
<https://www.youtube.com/watch?v=8Yqbu56ImXk&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=4>

- How do you keep the temperature of the solutions constant throughout the experiment?

.....  
.....

- How should the student measure the rate of reaction?

.....  
.....

- Name the apparatus needed to measure the following:

- Volume of liquid: .....
- Time:: .....
- pH: .....

- How would you present your results for this practical?

.....

- A student's results are shown below. Calculate the rate of reaction

pH	Time taken for solution to turn black (minutes)	Rate of reaction
12	33.7	
10	26.8	
8	4.2	
6	19.3	
4	54.1	

- Draw a graph of the results on separate paper.