Investigating the Effect of Surface Area

**on an Enzyme Controlled Reaction**

You need to research and record (including references) a suitable method to carry out an investigation into how surface area affects the rate of hydrogen peroxide breakdown by an enzyme using potato or liver tissue as a source of the enzyme.

You must include a suitable risk assessment.

Which enzyme breaks down hydrogen peroxide?: ……………………………………….  
(reference: ……………………………………………………………………………………)

What are the products of the reaction?: …………..……….. and ………..…………..  
(reference: ……………………………………………………………………………………)

How can its activity can be estimated?: …………..…………………………..…………..  
……………….………………………………………………………………………………...

……………….………………………………………………………………………………...  
(reference: ……………………………………………………………………………………)

**Apparatus provided:** potatoes liver cork borers cutting tile chopping board scalpel knife potato peeler stop clock Vernier callipers 20vol (6%) hydrogen peroxide water trough   
gas syringe measuring cylinders conical flasks   
boiling tubes test tubes delivery tubes & bungs thermostatically controlled water-bath balance

You may ask for any additional equipment (including safety apparatus) you require

How will the enzyme and substrate be able to form an enzyme-substrate-complex if the enzyme is intracellular?: ………………………………………………………………  
……………….………………………………………………………………………………...……………….………………………………………………………………………………...……………….………………………………………………………………………………...……………….………………………………………………………………………………...

Continue your recording in your lab book.