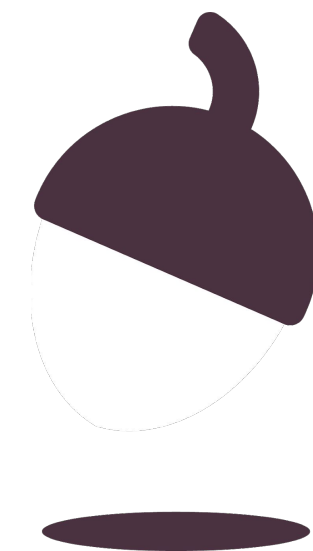


Combined Science - Biology - KS4  
Organisation

# pH and Enzymes 2

(Downloadable student document)

Mr Humphries



**OAK**  
NATIONAL  
ACADEMY

# Independent Task

Fill in the gaps

1. Add one drop of \_\_\_\_\_ to each spotting well
2. Place  $2\text{cm}^3$  of amylase, starch and pH 5 \_\_\_\_\_ solution in 3 different test tubes and place in a water bath for 10 minutes.
3. Add all the test tubes together and start a \_\_\_\_\_.
4. Use a stirring rod to transfer the solution to an iodine well every \_\_\_\_\_ seconds.
5. Record the time at which the iodine no longer changes \_\_\_\_\_.
6. Repeat steps 1-6 with pH 6, pH7, pH8 and pH 9 \_\_\_\_\_ solutions



# Independent Task

Answer the questions:

- 1. What is the optimum pH for amylase? (1)**
- 2. How does increasing pH above the optimum affect enzyme activity?(1)**
- 3. What does increasing pH above the optimum do to enzymes and how does this affect the active site? (2)**



# Independent Task

Answer the questions.

- 1. Give two issues with this investigation (2)**
- 2. Give two ways the investigation could be improved (2)**

