



Biology – Ecology & Sampling
Applicant Study Pack

Description of course	<p>The study of Biology enables the development of many transferable skills. This makes the study of Biology an asset sought by both university and employers. This course grounds students in all the main concepts while also allowing some scope to delve into the more social, medical and environmental aspects of modern Biology. The course enables students to follow careers such as pharmacy, medicine and veterinary science. A Level Biology builds on the concepts and skills developed at GCSE and it is particularly suitable for those who have the skills and knowledge associated with a GCSE Additional Science qualification or equivalent.</p>
Task 1	<p>Ecology is the study of the natural world. Now more than ever it is vital that we can quantify the biodiversity we have on Earth. By quantifying life we have a baseline on which to work from. We are currently in a mass extinction event called the Anthropocene (ie. Caused by human activities) by understanding the vast beauty of biodiversity we can preserve it and in doing so help to reduce the ecological disaster that will befall us if we do not act.</p> <p>A common technique for quantifying biodiversity in an area is through the use of quadrats. These metal squares can be used in a number of ways:</p> <ul style="list-style-type: none"> • Count - the number of an organism in the quadrat • Percentage cover - the percentage of the ground covered by the organism • Frequency/abundance - the percentage of quadrats the organism is found in <div data-bbox="512 992 1098 1402" data-label="Image"> </div> <p>Practical: In your garden/ local green space. Carry out sampling using a quadrat— these can be easily made using sticks: http://blog.soton.ac.uk/bioblitz/2015/03/25/how-to-make-a-quadrat/</p> <p>Method:</p> <ol style="list-style-type: none"> 1. Divide the area up into a grid and assign each square coordinates 2. Use a random number generator (e.g. a calculator or random number table) to randomly pick choose numbers: https://www.random.org/ 3. Use the numbers as coordinates to place the quadrats 4. Estimate % cover, count organisms or indicate if the organism is present or not 5. Repeat until you have sampled ~10% of the area 6. <u>Work out the area of land you have sampled, calculate a mean and then times this by the total area of the space you have sampled.</u>

	<p>Download an app called PictureThis to help identify any plant species which you don't know the name of.</p> <p>Record and evaluate your data—do you think your data is representative and reliable?</p>
<p>Task 2</p>	<ul style="list-style-type: none"> • Create a pitfall trap: https://www.rspb.org.uk/fun-and-learning/for-families/big-wild-sleepout/meet-your-local-minibeasts/ • Download the 'iNaturalist' app to identify your bugs! • Treat your insects kindly and ensure you don't leave your trap out too long as they might eat each other... 
<p>Further reading / links</p>	<p>https://www.bbc.co.uk/bitesize/guides/z8s2v9q/revision/3</p> <p>https://www.youtube.com/watch?v=2MW6nwf80XM</p> <p>https://www.savemyexams.co.uk/notes/as-biology-aqa/4-genetics-variation-interdependence-as/4-6-biodiversity-as/4-6-6-random-sampling-as/</p>
<p>Call to action</p>	<p>Visit our website – www.clarendon.ac.uk for more information.</p> <p>Attend our New Student Day</p> <p>Join us for enrolment in August. Letters will be sent to all applicants at the end of July with more details.</p>