

# Key Stage 4

**Our Key Stage 4 programmes are designed to lead students through the process of investigation using scientific principles and interactive learning experiences.**

Our education programme is delivered at our two private nature reserves, Nower Wood and Bay Pond, and led by experienced staff who are first aid trained and DBS checked to give you peace of mind and your class a unique immersive experience. Choose two of our half day sessions to make up your visit. A day typically runs from 10:00 – 15:30 including a break for your packed lunch.

All of our sessions are flexible and can be adapted to your specific requirements.

## Investigations & Data Collection:

### **Aquatic Invertebrate Study**

Half Day | Nower Wood or Bay Pond

A comparative study of two ponds where abiotic factors, such as pH, light and turbidity, are measured and organisms are collected with a dipping net to be identified and counted. Once the students have collated their data, we determine why the two ponds might differ in their invertebrate communities and abiotic factors. Discussions can also include predator-prey relationships, food chains and webs, pyramids of numbers, and feeding levels. The video microscope will allow us to see the adaptations of the aquatic invertebrates in fantastic detail.

### **Terrestrial Invertebrate Study**

Half Day | Nower Wood

We begin by collecting leaf litter from two woodland areas (such as under pine and oak trees). Abiotic factors are measured and the two samples are searched thoroughly to find the invertebrates. These are observed, identified, counted and the results collated. Discussions can include predator-prey-relationships, feeding levels, pyramids of numbers and the relevance of the abiotic data. We finish by looking at the creatures under the video microscope, enabling us to see their adaptations in fantastic detail.

### **Woodland Comparison**

Half Day | Nower Wood

In this study we visit two areas of coppiced woodland to sample and compare the ground flora. This study uses quadrats on an XY grid with random numbers to measure either percentage cover or plant diversity. Simple-to-use cards aid plant identification and abiotic data is also collected. From their data, the students then work out why there is a difference in plants at the two sites. This session clearly shows the impact of an abiotic factor on plant growth and the importance of woodland management in maintaining diversity.

**Why not combine Terrestrial Invertebrates with Woodland Comparison to bring interdependence to life, or Pond Study with Terrestrial Invertebrates for a great way to look at how organisms are adapted to their habitats.**

## GIS: Dormouse Study or Village Study

Half Day | Nower Wood or Bay Pond

**Nower Wood:** a woodland study evaluating habitat suitability for dormice

**Bay Pond:** a village study looking at the human geography of Godstone

Geographical Information Systems (GIS) are increasingly important in the modern world, and this is being reflected in the geography curriculum. Give your students a hands-on introduction to GIS by collecting real data, generating maps and interpreting results. This session makes GIS simple and accessible for all.

## Ecological Sampling Techniques

Half Day | Nower Wood or Bay Pond

Practical experience is the best way to learn both biotic and abiotic sampling techniques. Students can get hands-on experience of transects, quadrats, sweep netting, tree beating and capture-mark-recapture and learn about pitfall traps, small mammal surveys and other techniques for protected species. Our abiotic measurements include light, temperature, humidity, soil type and pH. Pick and choose the techniques to fit your needs.

## Ecosystems

Half Day | Nower Wood or Bay Pond

This flexible session enables many aspects of ecology to be covered. Examples include food chains and webs, woodland structure and adaptations and distribution of plants in different habitats. In autumn, seeds, fungi and factors affecting decomposition can be considered, whereas in spring and summer there are ample opportunities to study the life cycle of flowering plants. Great as an introduction to the topic or a fantastic way to solidify classroom work by seeing theory in action.



## Individual Projects and Core Practicals

Half Day | Nower Wood or Bay Pond

Please contact us if you are interested in undertaking individual projects or specific core practicals.

## Add-ons

You can also choose one of the below add-ons to be incorporated during your day with us:

### Add-on 1: Lincoln Index

Nower Wood or Bay Pond

A capture-mark-release-recapture exercise enables us to estimate the population of woodlice using the Lincoln Index. We will capture in the morning and recapture in the afternoon.

### Add-on 2: Small Mammal Trapping

Nower Wood

The students will set humane Longworth traps at the beginning of the day, ensuring they contain the survival basics (food, water, warmth). At lunchtime, and again at the end of your visit, traps will be checked and any small mammals will be looked at by the group before being released where they were caught.

### Add-on 3: Statistical Analysis

Nower Wood or Bay Pond

We can modify the day to spend longer in the classroom analysing data collected if you would prefer to complete the exercise with us rather than back at school. A range of statistical analyses can be undertaken depending upon the data collected e.g. Mann-Whitney-U; Simpson's Diversity Index and Spearman's Rank.

## Prices & Booking

For visits to our centres, please see representative prices below. There is a room deposit of £50 for half day visits and £100 for a full day visit, and the prices below are per child (there is no charge for accompanying adults).

Nower Wood visits	Per Pupil	Minimum No.	Adult Ratio
Key Stage 3	£14	11	1:10
Key Stage 4	£18	7	1:10
A Level	£23	5	1:15
Bay Pond visits	Per Pupil	Minimum No.	Adult Ratio
Key Stage 3	£12	11	1:10
Key Stage 4	£16	7	1:10
A Level	£20	5	1:15

**If you have any questions or would like to make a booking, please get in touch:**

Call: 01372 379509

Email: [education.centres@surreywt.org.uk](mailto:education.centres@surreywt.org.uk)

