Name of session	**Habitat Explorer** (classification, life cycles & adaptations)		
	Level: Upper KS2 Year5&6	Length of session: 2 hours	Available at: Sutton Ecology Centre

Curriculum Links

Working Scientifically

- Using a range of scientific equipment, with increasing accuracy and precision
- Recording data and results using labels and classification keys

Living things and their habitats

- Describe how animals are classified into broad groups according to common observable characteristics based on similarities and differences.
- Describe the life cycle of an insect (stag beetle)
- Describe the life processes of reproduction in some animals (stag beetle)

Evolution and inheritance

- Identify how animals are adapted to suit their environment in different ways

Previous knowledge expected from students	Key concepts/key words
To have seen the picture of a woodland and meadow in different seasons. To predict which creatures we might see in the current season.	Vertebrate, invertebrate, classification of animals, identifying animals, key, adaptations, observation, camouflage, predator, prey, stag beetle, life cycle, endangered species

Learning objectives

To be able to group woodland and meadow animals into vertebrates and invertebrates, and to begin to put them into further groups.
To learn about the life cycles and life processes of a stag beetle
To be able to use a dichotomous key to identify woodland creatures.
To learn that all creatures are adapted to their environment and way of life and to be able to observe creatures closely to find their adaptations.
To be able to use a variety of different equipment and methods to collect invertebrates, identify and record what they found and draw conclusions from their results.

Outcomes

Pupils will be able to name a variety of vertebrates and invertebrates, some pupils will be able to groups these further.
Pupils will be able to talk about all or some of the life cycle stages and life processes of stag beetles.
All pupils will have used a dichotomous key to identify at least one creature.
Pupils will have recorded the creatures found in their groups and observed them closely to

Starter

5 mins: what season is it? What do you think we might find? Make predictions about what we might find based on season?

Introduction

Timings	Student Activity
20 mins	Pupils are given a toy woodland or meadow creature and are asked to decide which habitat they come from. We discuss the answers and bring up adaptations to their habitat (camouflage, mouth parts, warning colours, wings) Pupils then group them into Vertebrate or invertebrate. Then, can these be grouped further and why? Find the pictures of the stag beetle life cycle and construct the life cycle together. Discuss reasons for it being an endangered species.

Main Activities

Timings	Student activity
20mins	Investigating the meadow, using a variety of equipment and methods to collect

	invertebrates. . Using a dichotomous key, pupils are shown how to identify their creatures. They record what they found using a tally.
30mins	Investigating the woodland, using a variety of equipment and methods to collect invertebrates. Using a dichotomous key, pupils are shown how to identify their creatures. They record what they found using a tally.
15mins	As a class, we analyse the results and see if they what we predicted. Pupils discuss the differences based on adaptations to the habitat.

Plenary

(20 mins) Using all the information they have learnt about adaptations, pupils create a new minibeast from natural materials in groups. They must decide where it lives, how it moves, what it eats and how etc and present this to the rest of the class. Wash hands and prepare to leave.

Extension work

Create a food web.

Pre-course preparation work suggestions

Discussion to establish prior knowledge and what the children would like to find out.
Quiz to revise key vocabulary on food chains, habitats, adaptations and life cycles.
Use a dichotomous key to identify pictures of organisms.
Research lesson (homework/groupwork in school) – give each child/group a different invertebrate. Children research what it eats, what it is eaten by (put it in to food chains), habitat, adaptations, life cycle, etc. Make a fact file.
Host caterpillars which undergo metamorphosis to become butterflies as a life cycle to compare stag beetles to.
Write a report/article on stag beetles. Research decline in numbers and what can be done to help them.

Further Work (post course) suggestions

Choose some of the creatures found in the woodland and meadow and study their life cycles (e.g. butterfly).
Design the 'ultimate minibeast' based on adaptations, what factors could have lead the evolution of this 'ultimate minibeast'.

Alternatives (field sites and wet weather)

This session is not translatable inside, and therefore will go ahead in wet weather.
The introduction and plenary can be done inside if the weather is wet or too cold/windy.
The session will be cancelled only due to severe weather warning such as flooding, high winds and stormy weather.

Opportunities for evaluation

Teacher evaluation: Photograph pupils in action for evidence, observation throughout the session, assess understanding post session through activities and questioning. By providing appropriate level of adult/child ration to ensure pupils are kept 'on task'.

Leader evaluation: The session leader will assess progress throughout the day by open ended questioning and plenary session. Through observation, the session leader will ensure that all pupils are engaged in learning and complete the tasks required.

Resources

Picture of different stages of stag beetle life cycles.
Recording sheets.
Bug pots, brushes, sweep nets, tree beat nets, keys, slug and snail pots,

Key H&S
Dress and prepare for the outdoors. Long trousers due to tall grass, brambles and nettles. Sensible footwear in all weather conditions. Waterproofs in wet weather. Sunhats, suntan lotion and water bottles in hot sunny weather. All pupils and teachers should wash their hands prior to leaving the site or eating. Teachers should arrange a pre-visit to discuss specific health & safety requirements to generate their own risk assessments. Course leaders: Site check and dangerous litter pick.