

Name of session	Pond Explorer (classification, life cycles & adaptations)		
	Level: Upper KS2 Year5&6	Length of session: 2 hours	Available at: Sutton Ecology Centre
Curriculum Links			
Working Scientifically <ul style="list-style-type: none">Using a range of scientific equipment, with increasing accuracy and precisionRecording data and results using labels and classification keys			
Living things and their habitats <ul style="list-style-type: none">Describe the differences in the life cycles of an amphibian and an insect (frog and dragonfly)Describe the life processes of reproduction in some animals (frog and dragonfly)Describe how animals are classified into broad groups according to common observable characteristics based on similarities and differences.			
Evolution and inheritance <ul style="list-style-type: none">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 pond in the different seasons. To have seen the life cycles of a dragonfly and frog and to have predicted which stages of the life cycle we might see in the pond on their visit.		Vertebrate, invertebrate, classification of animals, identifying animals, key, adaptations, observation, life cycle, frog, tadpole, frogspawn, dragonfly, nymph, eggs.	
Learning objectives			
To be able to group pond animals into vertebrates and invertebrates, and to begin to put them into further groups. To learn about the differences in the life cycles between frogs and dragonflies. To be able to use a dichotomous key to identify pond 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 pond dip to collect pond creatures, identify and record what they found and observe their findings carefully to make a scientific drawing.			
Outcomes			
Pupils will be able to name a variety of vertebrates and invertebrates, some pupils will be able to group these further. Pupils will be able to talk about all or some of the life cycle stages and life processes of frogs and dragonflies. All pupils will have used a dichotomous key to identify at least one pond creature. Pupils will have recorded the creatures found in their groups and all pupils will have made a scientific labelled drawing based on close observation of one creature.			
Starter			
5 mins: what season is it? Which picture of the pond habitat matches this season best? What do you think we might find? Make predictions about what we might find in the pond based on season?			
Introduction			
Timings	Student Activity		
20 mins	Pupils are given a picture of a pond creature, or animals that visit the pond and are asked to group them into Vertebrate or invertebrate. Then, can these be grouped further and why? Find the pictures for two food chains – frog and dragonfly. Make these together.		
Main Activities			

Timings	Student activity
20mins	Pond dipping, in 6 groups. Safety talk.
10mins	Using a dichotomous key, pupils are shown how to identify their creatures. They record what they found using a tally.
	Creatures are taken back to the classroom in observation tanks.
10mins	Adaptation activity: if you were a pond creature, what could we wear to help us survive in the pond?
30mins	Look at the creatures closely under the video microscope to look closely at their adaptations. Look at how creatures breath, how are they adapted to what they eat, are they camouflaged?
15mins	Pupils concentrate on making a drawing of one creature, and label the adaptations to its way of life.
Plenary	
(10 mins) Consider the adaptations of different pond creatures to breathing in their environment. Think about frogs life cycle (recap) do they breathe the same way through their life cycle or does it change?	
Extension work	
What are the advantages and disadvantages of each way of breathing.	
Pre-course preparation work suggestions	
Discussion to establish prior knowledge and what the children would like to find out. Quiz to revise key food chain vocabulary. Use a dichotomous key to identify pictures of organisms. Research lesson (homework/groupwork in school) – give each child/group a different invertebrate that will be found at the Ecology Centre. 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.	
Further Work (post course) suggestions	
Choose some of the creatures found in the pond and study their life cycles. Design the ‘ultimate pond creature’ based on adaptations, what factors could have lead the evolution of this ‘ultimate pond creature’.	
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 dragonfly and frog life cycles.	

Picture of two children (red stripy top, jeans etc), camouflaged wet suit & flippers, mermaid skin, snorkel, oxygen tank, net, harpoon.

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.