








 Children’s prior learning in this area	 Cultural Capital Opportunities	 Key vocabulary and glossary
<p>explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>identify and name a variety of plants and animals in their habitats, including microhabitats</p>	<p>Trip to Upton Heath with Urban Heaths Partnership to identify living things in the local environment and to identify changes and dangers to habitat</p> <p>Understand the need for responsible stewardship and understand we can all make positive changes to look after the environment.</p> <p>Pupils to have an active voice in developing a project that will have a positive impact on the environment.</p>  <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div data-bbox="913 1182 1137 1441">  <p>SARAH ALLEN UHP education coordinator</p> </div> <div data-bbox="1160 1182 1384 1441">  <p>LISA CLAYTON UHP education officer</p> </div> </div>	<p>Classification classification keys characteristics environment habitat heathland flowering plants non-flowering plants mosses ferns grasses vertebrates fish amphibians reptiles birds mammals invertebrates snails slugs worms spiders insects impact danger change effect endangered</p>

Enquiry Question - How do we identify living things?	Enquiry Question – How can living things be grouped?	Enquiry Question - How are animals classified?
<p>Working scientifically skill – Observe closely</p> <p>Enquiry type – Identify and classify</p> <p>Aut 1</p>	<p>Working scientifically skill - Observe closely</p> <p>Enquiry type - Identify and classify</p> <p>Aut 1</p>	<p>Working scientifically skill - Present and report findings</p> <p>Enquiry type – Research using secondary sources</p> <p>Aut 1</p>
<p>Children will know: that living things can be identified by their characteristics.</p> <p>Scientists that give names to living things are called taxonomists.</p> <p>To help us identify and understand different living things, taxonomists classify them by their characteristics. Classify means to organise things into groups. A characteristic is a feature that helps us to identify a particular thing. Specific or unique characteristics are helpful for identifying a particular living thing rather than general characteristics.</p> <p>Children will know how to: observe closely for identification</p> <p><i>Practise:</i> Tick the specific characteristics that help to identify a cheetah.</p> <p><i>Apply:</i> Guess who? Choose an animal picture for a partner to identify. Make a list of the animal’s characteristics. Ask them to use the characteristics to identify the correct animal.</p> <p><i>Deepen:</i> Dan says, “Cats have noses so this is a characteristic I can use to help identify cats.” Is this a good idea? Prove your thinking.</p> 	<p>Children will know: that general characteristics are used for classifying living things into groups. Living things can be grouped in lots of different ways based upon their characteristics. Sorting diagrams such as Venn diagrams and Carroll diagrams can be used to classify living things. To use these diagrams, you must follow the criteria. Criteria are the rules that we use to decide something.</p> <p>Children will know how to: observe closely in order to group living things by their characteristics</p> <p><i>Practise:</i> In pairs and groups, consider criteria for classifying – share with class.</p> <p><i>Apply:</i> In groups, classify the animal images onto a Venn diagram and a Carroll diagram with criteria given. Extend by creating own criteria.</p> <p><i>Deepen:</i> These animals have been classified into two groups. What could the criteria be? Share thoughts and write up in Big Book.</p> 	<p>Carl Linnaeus is a famous scientist who devised a system for classifying and naming plants, animals and minerals. Linnaeus’ system was highly organised and clear. Each living thing was given a two part name. He ranked living things by a kingdom (e.g. animals and plants) and then by class (e.g. mammals and fish). His classification system is what we still use today, although it has been improved upon.</p> <p>Vertebrates are animals that have backbones. They have endoskeletons. Five broad groups of vertebrates are:</p> <p>Mammals: Warm-blooded, have fur or hair, most give birth to live young; the mother feeds the young with milk</p> <p>Reptiles: Cold-blooded, lay eggs on land, have scales and lungs.</p> <p>Amphibians: Cold-blooded, smooth skin, no scales, most live the young part of their life in water using gills to breathe and then develop into adults with lungs that can live on land. Lay eggs in water.</p> <p>Birds: Warm-blooded, lay eggs on land, have a beak, feathers, wings and two legs.</p> <p>Fish: Cold-blooded, scaly skin, fins, gills to breathe, lay eggs in water.</p> <p><i>Practise:</i> Answer retrieval questions about Carl Linnaeus using the video and fact-file provided.</p> <p><i>Apply:</i> In groups, research a given class of vertebrate.</p> <p><i>Deepen:</i> In groups, present the research in the form of a poster to teach the rest of the class and present to class.</p> 

Enquiry Question - How do we use a classification key?	Enquiry Question – Are living things in danger from changes to the heathland?	Enquiry Question - How has the heathland changed from Summer to Autumn?
<p>Working scientifically skill – interpret results – answer the question</p> <p>Enquiry type – Identify and classify</p> <p>Aut 1</p>	<p>Working scientifically skill – Present and report findings</p> <p>Enquiry type – Research using secondary sources</p> <p>Aut 1</p>	<p>Working scientifically skill – interpret results – answer the question</p> <p>Enquiry type – observing over time/research using secondary sources</p> <p>Aut 1</p>
<p>Children will know: the characteristics of common vertebrates.</p> <p>Mammals: Warm-blooded, have fur or hair, most give birth to live young; the mother feeds the young with milk</p> <p>Reptiles: Cold-blooded, lay eggs on land, have scales and lungs. Amphibians: Cold-blooded, smooth skin, no scales, most live the young part of their life in water using gills to breathe and then develop into adults with lungs that can live on land. Lay eggs in water. Birds: Warm-blooded, lay eggs on land, have a beak, feathers, wings and two legs. Fish: Cold-blooded, scaly skin, fins, gills to breathe, lay eggs in water.</p> <p>Children will know how to: use a classification key. Classification keys are a way of identifying which class a living thing is in or identifying what species it is through a series of questions based on their similarities and differences. They will know that each question has a yes or no answer and leads you one step closer to the name of a living thing.</p> <p><i>Practise: Match descriptions of characteristics to correct class of vertebrates.</i></p> <p><i>Apply: Use a classification key to identify which class of vertebrate different animals belong to.</i></p> <p><i>Deepen: Look at a classification key with some questions missing. The questions to be provided below but muddled. Look at how the animals have been classified on the key and select which question belongs in which box.</i></p>	<p>This lesson will be a follow-up to the trip to Upton Heath with the Urban Heath Partnership. On the trip, children will have used classification keys to identify the six types of reptiles that live on the heathland. They will have used images and descriptions to identify plants in the habitat e.g. gorse, bell heather, common heather and they will have learnt about the birds that live there, such as the nightjar, the Dartford warbler and the stone chat. They will have learnt about the dangers that occur on the heathland – disturbance and erosion from walkers, cyclists, motorbikes and dogs, as well as dog poo, fire, flytipping and litter. They will have observed how these dangers can cause changes to the environment and how this impacts the wildlife that live there.</p> <p>Children will know: that living things are suited to particular habitats and in particular know how common heathland animals and plants are suited to the heathland habitat. Changes to an environment can be natural or caused by humans. Changes to an environment can have a positive as well as negative effects. Plants and animals rely on the environment to give them everything they need. Therefore, when habitats change, it can be very dangerous to the plants and animals that live there.</p> <p><i>Practise: Tick statements explaining why a living thing is suited to the heathland.</i></p> <p><i>Apply: Research the dangers that threaten the heathland and how this causes changes.</i></p> <p><i>Deepen: Present findings to send to Urban Heaths Partnership to help raise awareness.</i></p>	<p>Children will know: As the season changes from Summer to Autumn, the population of birds on the heathland begins to decrease. Nightjars migrate to sub-Saharan Africa. However, stonechats may continue to live on the heathland - some may migrate. With the climate changing, we are having milder winters and are favourable for stonechats. Dartford Warblers will remain. Dogs can now be let off leads as it is no longer nesting season. For reptiles, the Summer was the season for young being born and eggs hatching. As Summer ends, reptiles try to bulk up for the winter, feasting as much as possible. This will increase their chance of survival over the Winter. In mid-late Autumn, the reptiles go into hibernation. They will hibernate in old mammal burrows, tree roots, rocky piles or log piles. Heathers have been in full bloom in Summer. By mid-Autumn, the flowers fade. The heather leaves will have a reddish-brownish hue. Gorse, however, will have flowers most of the year. Some pollinators, like bees and butterflies, start to migrate or hibernate. Fungi begin to appear. A positive change to the heathland: Grazing animals reduce unwanted plants from growing, giving space for the slow growing heathland plants.</p> <p>Children will know how to: identify differences, similarities or changes related to more complex groups of living things</p> <p><i>Practise: Sort statements – Summer or Autumn.</i></p> <p><i>Apply: Identify changes, differences and similarities between seasons.</i></p> <p><i>Deepen: How do conservation officers protect the heath and wildlife during this time?</i></p>

Enquiry Question - How has the heathland changed from Autumn to Winter?	Enquiry Question - How has the heathland changed from Winter to Spring?	Enquiry Question - How has the heathland changed from Spring to Summer?
<p>Working scientifically skill – interpret results – answer the question</p> <p>Enquiry type – observing over time/research using secondary sources</p>	<p>Working scientifically skill – interpret results – answer the question</p> <p>Enquiry type – observing over time/research using secondary sources</p>	<p>Working scientifically skill – interpret results – answer the question</p> <p>Enquiry type – observing over time/research using secondary sources</p>
<p>Children will know:Frost covers the ground, and the vegetation appears dormant. The heather becomes dry and grey. The reptiles remain in hibernation. Hopefully, they will have found frost-free hibernation sites to increase chances of survival.</p> <p>Stonechats may continue to live on the heathland. They are partial migrants – some may migrate to Southern Europe and Northern Africa. With the climate changing, we are having milder winters and are favourable for stonechats. Some stonechats will stay in the UK but often move to wetland or coastal areas.</p> <p>A positive change to the heathland: Prescribed burning happens to remove older vegetation which could be a ‘fuel’ for uncontrolled fires. It promotes new growth, which in turn provides food and habitat variation. Prescribed burning only happens in winter whilst reptiles are hibernating and birds are not nesting.</p> <p>A positive change to the heathland: Grazing animals reduce unwanted plants from growing, giving space for the slow growing heathland plants.</p> <p>Children will know how to: identify differences, similarities or changes related to simple scientific ideas or processes and more complex groups of living things</p> <p><i>Practise: Sort statements – Summer or Autumn.</i></p> <p><i>Apply: Identify changes, differences and similarities between seasons.</i></p> <p><i>Deepen: How do conservation officers protect the heath and wildlife during this time?</i></p>	<p>Children will know:</p> <p>In spring, heathland habitats burst into life. The cold winter days give way to milder temperatures, and the landscape becomes a vibrant tapestry of colours. The heather, which is the dominant plant in heathlands, starts flowering. Its purple hue spreads across the habitat, bringing beauty and attracting bees and butterflies. Reptiles come out of hibernation and after a few weeks, it will be breeding season. In late Spring, usually May, but sometimes late April, nightjars return. More stonechats will return.</p> <p>From March, dogs must be kept on leads to prevent disturbance to the ground nesting birds, which are breeding and nesting.</p> <p>A positive change to the heathland: Grazing animals reduce unwanted plants from growing, giving space for the slow growing heathland plants.</p> <p>Children will know how to: identify differences, similarities or changes related to simple scientific ideas or processes and more complex groups of living things</p> <p><i>Practise: Sort statements – Summer or Autumn.</i></p> <p><i>Apply: Identify changes, differences and similarities between seasons.</i></p> <p><i>Deepen: How do conservation officers protect the heath and wildlife during this time?</i></p>	<p>Children will know:</p> <p>As summer arrives, the heathland habitat becomes a hive of activity. The days are longer, and the warm sun offers an ideal environment for various insects and animals. Bees and butterflies continue to feed on the nectar provided by the flowering plants. Birds build their nests and raise their young. Reptiles, such as adders and lizards, bask in the sun to regulate their body temperature. Dogs still must be kept on leads to prevent disturbance to the ground nesting birds and chicks.</p> <p>A positive change to the heathland: Grazing animals reduce unwanted plants from growing, giving space for the slow growing heathland plants.</p> <p>Children will know how to: identify differences, similarities or changes related to simple scientific ideas or processes and more complex groups of living things</p> <p><i>Practise: Sort statements – Summer or Autumn.</i></p> <p><i>Apply: Identify changes, differences and similarities between seasons.</i></p> <p><i>Deepen: How do conservation officers protect the heath and wildlife during this time?</i></p>

<p>Enquiry Question - What different plants are growing in our school grounds and how would you classify them?</p> <p>Summer 2</p>	<p>Enquiry Question – Can you create a classification key to help the younger classes identify the plants in our school grounds?</p> <p>Summer 2</p>
<p>Working scientifically skill – observe closely, gather and record results (Assessment)</p> <p>Enquiry type - Identify and classify</p>	<p>Enquiry type - identify and classify Working scientifically skill - present and report findings</p>
<p>Children will know: Plants can be grouped in different ways, e.g. Trees – deciduous and evergreen Flowering and Non-flowering Some non-flowering plants include ferns, mosses and conifers. Funghi are not part of the plant kingdom. Children use classification keys to identify and classify plants in the school grounds and record the results of what is growing. Record findings in an appropriate way.</p> <p><i>Practise: Sort images of plants in tables according to groups above.</i> <i>Apply: Take a walk around the grounds observing plants closely and referring to a photo guide to identify them. Record results.</i> <i>Deepen: Write a paragraph to interpret what was found out.</i></p> <p>Assessment opportunity – interpreting results.</p> 	<p>Children will know how to: use a classification key. Classification keys are a way of identifying which class a living thing is in or identifying what species it is through a series of questions based on their similarities and differences. They will know that each question has a yes or no answer and leads you one step closer to the name of a living thing.</p> <p><i>Practise: Scaffolded task for creating a classification key.</i> <i>Apply: In threes, identify characteristics of plants given, noting similarities and differences.</i> <i>Deepen: In threes, create a classification key for a broad class of plants – either trees, flowering plants or non-flowering plants for younger children to use to identify specific species.</i></p> 