



Environmental Influences on Plants and Animals

Match the Answers to the Questions.

I. Broad-leaved Forest, Winter

- a) Why do deciduous trees lose their leaves in winter?
- b) Why can plants grow on the forest floor?
- c) Why do woodpeckers prefer to live in and near trees?
- d) Why do you think deer prefer to live in woodlands during the winter?
- e) Why might grey squirrels prefer to live in broad leaf forests?
- i) The woodland provides me with shelter from the wind, rain and snow. I can also find food here in the form of twigs, young trees, leaves from evergreen trees and bark from all trees.
- ii) There is not enough daylight, warmth or water for some trees to photosynthesise during the winter, so the trees lose their leaves in the autumn and grow them in the spring.
- iii) We evolved in broad-leaved forests in America and we prefer to eat large seeds like beech mast, acorns, hazel nuts and chestnuts which provide us with lots of energy. We can also digest acorns properly – the tannins don't affect me at all.
- iv) The sun's rays and energy can reach the forest floor throughout the year, so there is enough light for plants to grow here under the big trees .
- v) We like to eat insects which live in dead trees. You can often hear us hammering on the trees with our beaks, making holes and digging out the insects. We also make our nests in holes in trees.



2. Broad Leaved Forest, Summer

- a) How does the forest change in the spring?
- b) How are the leaves of broad-leaved trees adapted to catching sunlight?
- c) There are many ways in which tree leaves reduce water loss. Can you think of two?
- d) Why do badgers like to live in broad-leaved woodlands?
- e) Why do these plants grow and flower between March and May, and not later on in the summer?
 - i) These leaves are broad and flat with a large surface area to catch as much sunlight as possible. The trees only have leaves on for a few months, so they need to make as much food as possible in these months.
 - ii) Snowdrops, bluebells and wild garlic all grow and flower in the spring and summer to catch lots of sunlight before the leaves grow on the trees, shading the forest floor. These flowers store the food they make in bulbs underground, which stay in the soil all year round.
 - iii) I like to live in woodlands as there is a lot of food here – insects, worms, fallen berries and nuts and roots and bulbs of plants. The trees also provide me and my family with protection from danger and I dig my home in the soil under trees.
 - iv) Having hairs on leaves traps water evaporating from inside the leaf close to the leaf, slowing the rate of water loss. Some leaves have waxy or leathery surface which also reduces water loss.
 - v) At this time of year you can see buds appearing on trees and watch how they grow into leaves, flowers and catkins. It is a good time to listen to the birds singing and seeing birds and squirrels collecting materials for their nests and dreys.



3. Conifer Plantation

a) Why do most conifers keep their leaves all year?

b) How are conifer tree leaves adapted to reduce water loss?

c) If red squirrels have the choice, they prefer to make my nest or drey in conifer trees. Why?

d) Why do so few plants grow under the conifer trees?

e) I'm a Pine Marten. Why might I prefer to live in conifer forests?

i) It is often quite dark underneath conifer trees – especially in plantations where the trees are planted close together and are of all the same age and height. In these cases, it is too dark for other plants to grow.

ii) Conifer trees give my drey protection from aerial predators and rainfall all year round. Deciduous trees only provide protection for my drey when the leaves are out.

iii) Having leaves on all year round means that these trees don't lose the nutrients invested in them and if there are warmer sunny days during the winter, the trees can photosynthesise and make food.

iv) In the past, red squirrels were my favourite food, so I lived in conifer woodlands to find the red squirrels. Now I am now very rare in England. I will live in any woodland that provides me with roots to make my den in, enough food to eat and protection from humans. Often this is conifer woods.

v) Pine needles are long and thin and have a small surface area to volume ratio reducing water loss. Many conifer needles also have a waxy surface to help reduce water loss.