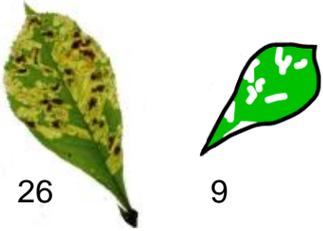




Pick a leaf from a conker tree that is infected with leaf miners. Seal it in a bag so even tiny insects cannot escape, and wait. After 2 weeks the insects inside the leaf will have hatched out. Identify the moths and the natural pest-controllers and record your results.

**Mission Part 1. Between 4 and 13 July (inclusive):**

 <p>Pick one leaf</p>	<p><b>1</b> Find a horse chestnut tree attacked by the leaf miner moth.</p> <ul style="list-style-type: none"><li>• Pick a leaf that is within your reach. Don't climb the tree or use a ladder!</li></ul>
 <p>Remove one leaflet</p>	<p><b>2</b> Select from the leaf just ONE leaflet (a 'finger' from the hand-like leaf), which will fit in your bag without being folded over.</p> <ul style="list-style-type: none"><li>• Count the number of mines on the leaflet (each mine is one whitish-brown patch with a darker brown spot).</li></ul>
 <p>Count the leaf mines</p>	<ul style="list-style-type: none"><li>• If there are insects on the leaf, brush them off. The insects we are interested in are still inside the leaf so cannot be brushed off.</li></ul> <p><b>3</b> Put the leaflet in a transparent 'ziplock' plastic bag (about A4 size and available as a food bag from supermarkets). Seal the bag, but don't squeeze all the air out.</p> <ul style="list-style-type: none"><li>• Write on the bag:<ul style="list-style-type: none"><li>• <i>The tree's location and typical leaf damage</i></li><li>• <i>What was under the tree (see next page)</i></li><li>• <i>The number of mines in the leaflet</i></li></ul></li></ul>
 <p>Seal the leaflet in a bag</p>	<ul style="list-style-type: none"><li>• Keep the bag in a cool room and away from bright light.</li><li>• You can collect as many leaves from as many trees as you want, but put each leaflet in a separate bag. The more you collect, the greater the chance you have of finding pest controllers!</li></ul>

**About this mission**

The leaf miner has become widely established in Britain over the past 10-15 years. We first carried out this citizen science project 10 years ago and found low rates of pest control. This mission is to find out how the pest control has changed since then.

**What is under the tree?** Look at the ground under the tree's canopy.



Only short grass

Is there just short or mown grass? (Nowhere for leaf litter to collect)

Or is there something else? (Where leaf litter will collect in the autumn)



Path edges

Bushes and undergrowth

Longer grass

The insects overwinter in leaf litter, so recording what is under the tree shows whether there are places that leaf litter could have collected.

**Record leaf miner damage**

Record the leaf damage score of a typical leaf



0: not infected with leaf mines



1: a couple of patches of leaf mines



2: less than half leaf mines



3: about half leaf mines



4: more than half leaf mines

**Mission Part 2. Between 18 and 24 July (two weeks after part 1):**

**4** Look very carefully at the contents of your bag. Use a magnifying glass, if available, to identify the tiny insects that have emerged from the leaf.

**5** How many adult moths and pest controllers can you see? One adult pest controller means one moth has been killed by it!

**6** Record your results on our website [www.conkertreescience.org.uk](http://www.conkertreescience.org.uk)

**What should you count?**

- ✓ DO count adult moths
  - metallic orangey with white stripes
  - about the size of a grain of rice



- ✓ DO count pest controllers
  - tiny parasitic wasps (1-3mm long)
  - shiny, usually all or mostly dark in colour
  - have unpatterned wings and narrow 'waists'



- ✗ DON'T count other insects
  - Often brownish or greenish in colour
  - Wings lacking or patterned

- ✗ DON'T count caterpillars or pupae
  - some caterpillars may emerge from the leaf
  - pupal cases appear to have legs, but are dark brown without white stripes



Photos by Rich Andrews (moth), Beentree (caterpillar), Gyorgy Csoka (pupa), Brian Valentine (all others). Used with permission

Find out more at [www.conkertreescience.org.uk](http://www.conkertreescience.org.uk)