



Handout: Predators and Parasites

... of caterpillars (larvae) and chrysalises (pupae).

There are three main categories of predator that eat caterpillars and chrysalises,

- 1) invertebrates (like spiders, lacewings, beetles and parasitic wasps)
- 2) birds (like blue tits and robins)
- 3) small mammals (like mice).

Of these three, invertebrates eat the most caterpillars, some eat nothing else. Small mammals have least effect, they eat a range of foods. The exact proportions eaten by each type of predator varies between butterfly and moth species. Invertebrate predators (and parasites) probably account for over 65% of the total number of all caterpillars eaten.

The Codling moth is a pest as it feeds on Apple trees. A study showed that in winter most Codling moth larvae were eaten by birds. In warmer months invertebrates had more impact, though, very unusually, birds remained the major predator for this species.

The same three types of predator eat chrysalises. Once more, invertebrates eat by far the largest numbers of most butterfly and moth species. Small mammals have more impact on numbers than birds (especially if the chrysalis forms on the ground).

Humans have a great impact on numbers too, by changing habitats.

- 1) How will putting birds' nest boxes in orchards effect the numbers of codling moths. Discuss your ideas and explain your thinking in the answer.
- 2) Farmers are told that if they leave 'wild' strips of grass around their fields fewer pests will eat their crops. What might live in these wild strips that could reduce the numbers of pests? Would they do better to put bird boxes around their fields? Discuss your ideas and explain your thinking in the answer.
- 3) Use your knowledge of predator prey relationships to explain why if one year there were large numbers of caterpillars, the next year there would be larger numbers of spiders and beetles, but fewer caterpillars.
- 4) Discuss and then explain why farmers may be wise not to spray fields to kill all invertebrates after a large numbers of caterpillars are seen.
- 5) Explain why even if the numbers of caterpillars rise dramatically, the number of small mammals doesn't vary as much as the numbers of invertebrate predators.