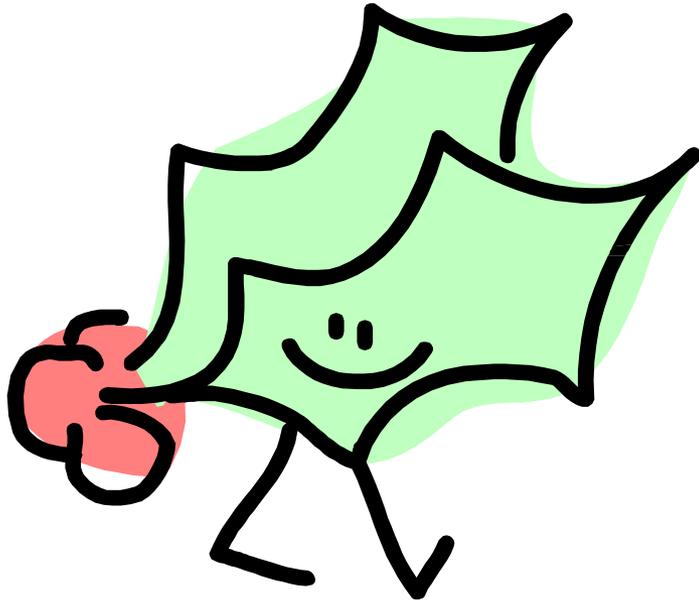
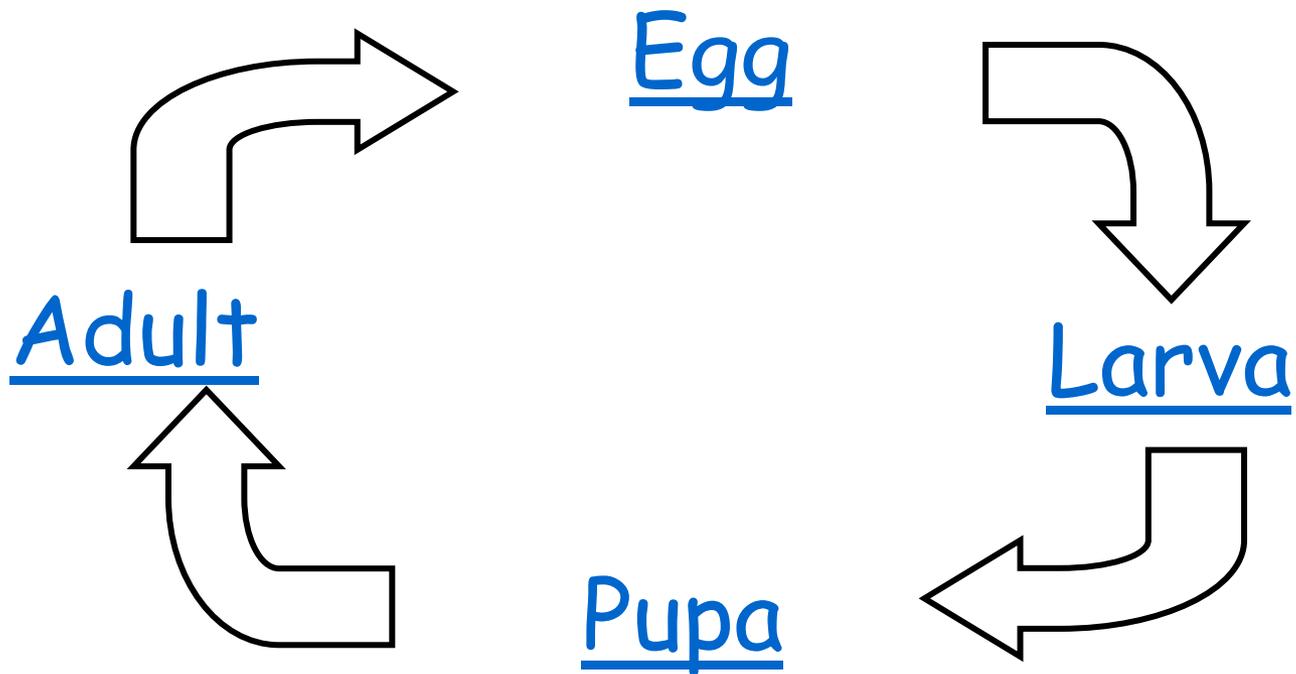


What happened to  
the holly leaf-miner?

AIM: To investigate the food chains of the holly leaf-miner and the holly tree



# Insect Life Cycle



## Method for each group

Choose a branch from a holly tree

Ignore the first few young leaves as they may be too immature to have mines on them

Count 10 leaves from the end of this branch and pick any leaves with mines found on them

Record how many leaves did not have mines on them

Record other information as on the worksheet

Repeat on 10 branches

## Equipment per group

1 plastic bag - to collect the leaves

1 pair scissors - to cut the leaves off if they are too prickly!

# Follow up

1. Use a scalpel to carefully to cut around the mine
  - do not cut into the mine itself
2. Use the key to find out what happened to the holly leaf miner
3. Record your results on Sheet 4

# Discussion

What would happen if the holly bush was sprayed with insecticide?

What would then happen to the number of the consumers?

What would then happen to the number of blue tits?

What would then happen the number of parasites?

# Discussion

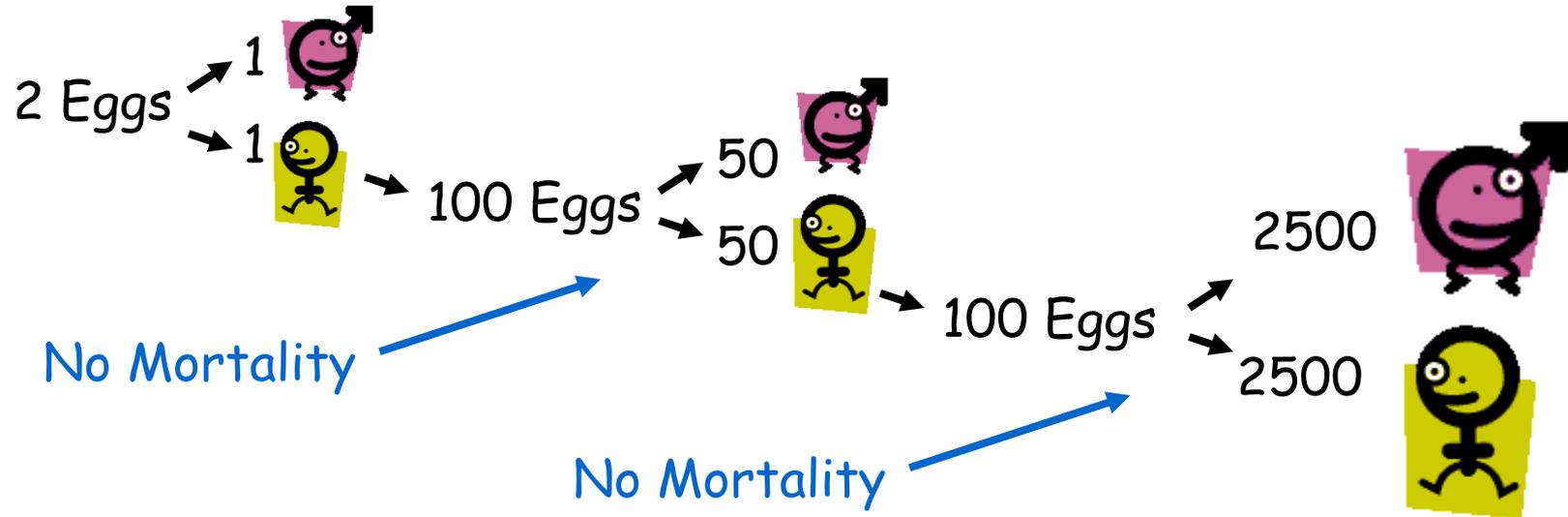
What if the environmental conditions change?

What did you record on your sheet; were they important factors?

What would happen to the population of the holly leaf miner if the blue tit numbers increased?

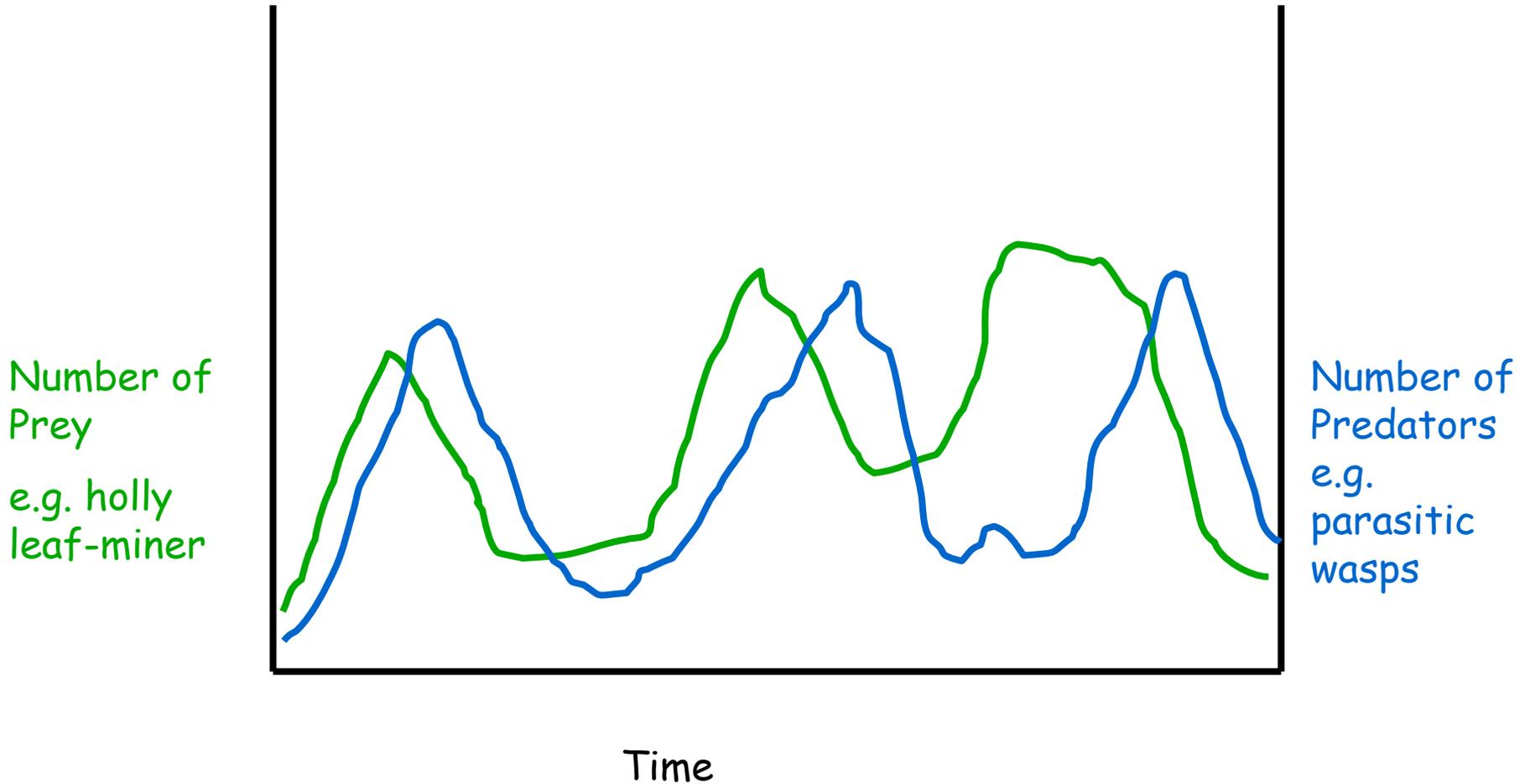
What would happen to the population of the holly leaf-miner if the blue tits and the parasites became extinct?

# If blue tits and the holly leaf miner parasites became extinct



After 3 years of nothing eating them you could have a population size of 250 000

# Predator Prey Relationships



# Competition

Organisms will compete with limiting factors or resources

What are they competing for?

What else are they competing for?

# Holly Leaf with a mine



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# Larva



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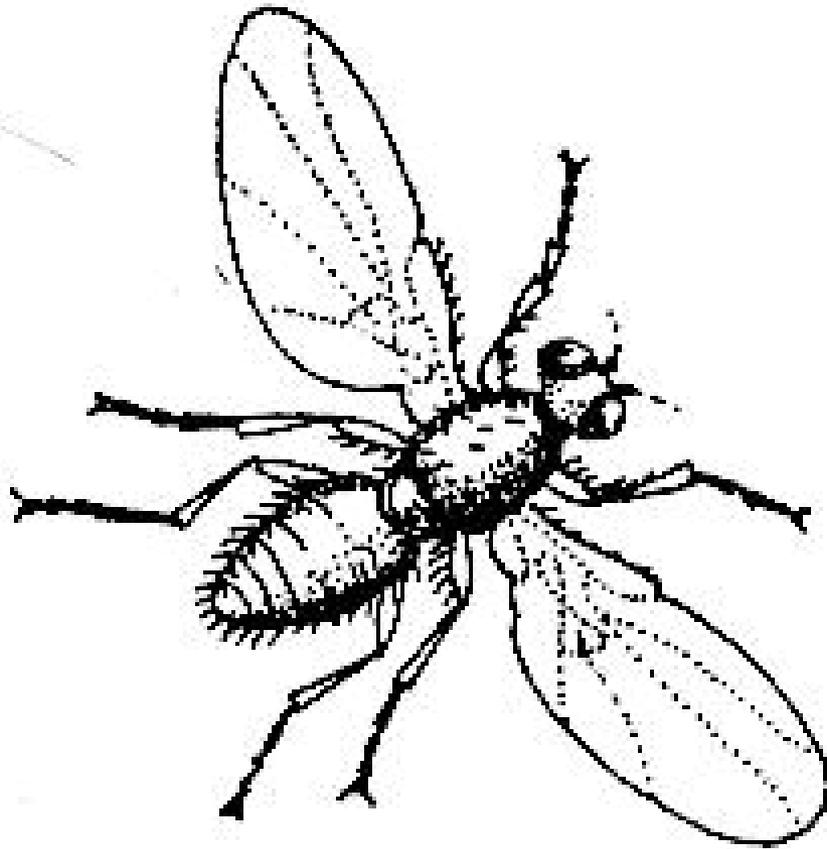
# Pupa



Puparium

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# Adult



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